

DIAGNOSES

Specierum novarum

in herbario Horti Regii Botanici Edinburgensis cognitarum.

CCCCLI-D.

THE species and varieties described in this series are :—

SPECIES ASIATICAE :—

Ajuga sciaphila, W. W. Sm., p. 193.
Ardisia shweliensis, W. W. Sm., p. 194.
Arenaria salweenensis, W. W. Sm., p. 194.
Aristolochia Delavayi, Franch., var. *micrantha*, W. W. Sm., p. 195.
Artemisia Forrestii, W. W. Sm., p. 195.
Campanula calcicola, W. W. Sm., p. 196.
Ceropegia aridicola, W. W. Sm., p. 197.
Ceropegia dolichophylla, Schltr., var. *purpureo-barbata*, W. W. Sm., p. 198.
Ceropegia monticola, W. W. Sm., p. 198.
Ceropegia muliensis, W. W. Sm., p. 199.
Cleome yunnanensis, W. W. Sm., p. 199.
Cremanthodium angustifolium, W. W. Sm., p. 200.
Cremanthodium bulbiliferum, W. W. Sm., p. 201.
Cremanthodium calcicolum, W. W. Sm., p. 201.
Cremanthodium Farreri, W. W. Sm., p. 202.
Cremanthodium suave, W. W. Sm., p. 203.
Dianthera sinensis, W. W. Sm., p. 204.
Elsholtzia pygmaea, W. W. Sm., p. 204.
Fraxinus suaveolens, W. W. Sm., p. 205.
Impatiens xanthocephala, W. W. Sm., p. 206.
Indigofera Howellii, Craib et W. W. Sm., p. 207.
Jasminum dumicolum, W. W. Sm., p. 207.
Jasminum heterophyllum, Roxb., var. *glabrecymosum*, W. W. Sm., p. 209.
Jasminum pulvinatum, W. W. Sm., p. 209.
Jasminum taliense, W. W. Sm., p. 210.
Lactuca tsarongensis, W. W. Sm., p. 211.
Magnolia mollicomata, W. W. Sm., p. 211.
Magnolia nitida, W. W. Sm., p. 212.
Magnolia rostrata, W. W. Sm., p. 213.
Magnolia tsarongensis, W. W. Sm. et G. Forrest, p. 215.
Michelia Lacei, W. W. Sm., p. 216.
Mucuna calophylla, W. W. Sm., p. 216.
Ophiorrhiza umbricola, W. W. Sm., p. 217.

Parrya xerophyta, W. W. Sm., p. 217.
 Plectranthus muliensis, W. W. Sm., p. 218.
 Podocarpus Forrestii, Craib et W. W. Sm., p. 219.
 Prema scoriarum, W. W. Sm., p. 219.
 Reineckia yunnanensis, W. W. Sm., p. 220.
 Saussurea trullifolia, W. W. Sm., p. 220.
 Saussurea velutina, W. W. Sm., p. 221.
 Schefflera (Heptapleurum) dumicola, W. W. Sm., p. 221.
 Scutellaria tenax, W. W. Sm., p. 222.
 Sideroxylon shweliense, W. W. Sm., p. 223.
 Silene sinowatsoni, W. W. Sm., p. 223.
 Strobilanthes shweliensis, W. W. Sm., p. 224.
 Thunbergia salweenensis, W. W. Sm., p. 224.
 Tovaria finitima, W. W. Sm., p. 225.
 Tovaria Wardii, W. W. Sm., p. 226.
 Vaccinium oreogenes, W. W. Sm., p. 227.
 Viburnum shweliense, W. W. Sm., p. 227.
 Viola poganantha, W. W. Sm., p. 228.
 Wikstroemia leptophylla, W. W. Sm., p. 229.
 Wikstroemia mekongensis, W. W. Sm., p. 229.

The species fall into the following natural orders:—

ACANTHACEAE: *Dianthera sinensis*, W. W. Sm., p. 204.
Strobilanthes shweliensis, W. W. Sm., p. 224.
Thunbergia salweenensis, W. W. Sm., p. 224.

ARALIACEAE: *Schefflera (Heptapleurum) dumicola*, W. W. Sm., p. 221.

ARISTOLOCHIACEAE: *Aristolochia Delavayi*, Franch., var. *micrantha*, W. W. Sm., p. 195.

ASCLEPIADACEAE: *Ceropegia aridicola*, W. W. Sm., p. 197.
Ceropegia dolichophylla, Schltr., var. *purpureo-barbata*, W. W. Sm., p. 198.
Ceropegia monticola, W. W. Sm., p. 198.
Ceropegia muliensis, W. W. Sm., p. 199.

CAMpanulACEAE: *Campanula calcicola*, W. W. Sm., p. 196.

CAPPARIDEAE: *Cleome yunnanensis*, W. W. Sm., p. 199.

CAPRIFOLIACEAE: *Viburnum shweliense*, W. W. Sm., p. 227.

CARYOPHYLLACEAE: *Arenaria salweenensis*, W. W. Sm., p. 194.
Silene sinowatsoni, W. W. Sm., p. 223.

COMPOSITAE: *Artemisia Forrestii*, W. W. Sm., p. 195.
Cremanthodium angustifolium, W. W. Sm., p. 200.
Cremanthodium bulbilliferum, W. W. Sm., p. 201.
Cremanthodium calcicolum, W. W. Sm., p. 201.
Cremanthodium Farreri, W. W. Sm., p. 202.
Cremanthodium suave, W. W. Sm., p. 203.
Lactuca tsarongensis, W. W. Sm., p. 211.
Saussurea trullifolia, W. W. Sm., p. 220.
Saussurea velutina, W. W. Sm., p. 221.

CONIFERAE: *Podocarpus Forrestii*, Craib et W. W. Sm., p. 219.

CRUCIFERAE: *Parrya xerophyta*, W. W. Sm., p. 217.

GERANIACEAE: *Impatiens xanthocephala*, W. W. Sm., p. 206.

LABIATAE: *Ajuga sciaphila*, W. W. Sm., p. 193.
Elsholtzia pygmaea, W. W. Sm., p. 204.
Plectranthus muliensis, W. W. Sm., p. 218.
Scutellaria tenax, W. W. Sm., p. 222.

LEGUMINOSAE : Indigofera Howellii, Craib et W. W. Sm., p. 207.
 Mucuna calophylla, W. W. Sm., p. 216.

LILIACEAE : Reineckia yunnanensis, W. W. Sm., p. 220.
 Tovaria finitima, W. W. Sm., p. 225.
 Tovaria Wardii, W. W. Sm., p. 226.

MAGNOLIACEAE : Magnolia mollicomata, W. W. Sm., p. 211.
 Magnolia nitida, W. W. Sm., p. 212.
 Magnolia rostrata, W. W. Sm., p. 213.
 Magnolia tsarongensis, W. W. Sm. et G. Forrest,
 p. 215.
 Michelia Lacei, W. W. Sm., p. 216.

MYRSINEAE : Ardisia shweliensis, W. W. Sm., p. 194.

OLEACEAE : Fraxinus suaveolens, W. W. Sm., p. 205.
 Jasminum dumicolum, W. W. Sm., p. 207.
 Jasminum heterophyllum, Roxb., var. glabrecybosum,
 W. W. Sm., p. 209.
 Jasminum pulvinatum, W. W. Sm., p. 209.
 Jasminum taliense, W. W. Sm., p. 210.

RUBIACEAE : Ophiorrhiza umbricola, W. W. Sm., p. 217.

SAPOTACEAE : Sideroxylon shweliense, W. W. Sm., p. 223.

THYMELINEAE : Wikstroemia leptophylla, W. W. Sm., p. 229.
 Wikstroemia mekongensis, W. W. Sm., p. 229.

VACCINIACEAE : Vaccinium oreogenes, W. W. Sm., p. 227.

VERBENACEAE : Premna scoriarum, W. W. Sm., p. 219.

VIOLACEAE : Viola poganantha, W. W. Sm., p. 228.

Ajuga sciaphila, W. W. Sm. Sp. nov.

Inter species chinenses affinis *A. ovalifoliae*, Bur. et Franch. a qua habitu subprostrato, petiolis laminam aequantibus, calyce longe et sparsim piloso inter alia differt; ab *A. lobata*, D. Don foliis ovatis basi breviter decurrentibus haud cordatis recognoscitur.

Planta semi-prostrata 10-15 cm. alta, ramis inferioribus longe decumbentibus; caules petiolique pilis longiusculis albidis plus minusve dense induti. Folia petiolo alato subaequilongo suffulta; lamina 3-5 cm. longa, 2.5-3.5 cm. lata, ovata, apice rotundata vel obtusa, basi breviter decurrentis, margine undulato-lobatula, pallido-virens, utrinque pilis longis paleaceis subdense conspersa. Verticillastri 2-6-flori, inconspicui, inter folia subcelati; flores breviter (3-5 mm.) pedicellati, laete caerulei. Calyx circ. 7 mm. longus anguste tubulosus pilis longiusculis laxis sparsim indutus, fere ad medium in lobos lanceolatos subacutos divisus. Corolla fere 2.5 cm. longa, extra hic illic pilis longis conspersa, tubo recto anguste cylindrico ad fauces ampliato; limbus conspicuus circ. 1 cm. longus, lobis superioribus brevissimis, labii lobo intermedio lateralibus multo longiore emarginato. Stamina e tubo paululo exserta. Fructus maturus deest.

"West China:—Yangtze-Yungning divide, Yunnan, on shady banks in mixed and pine forests. Lat. $27^{\circ} 40'$ N. Alt. 10,000 ft. Semi-prostrate plant of 4–6 inches. Flowers bright blue. June 1914." G. Forrest. No. 12,470.

***Ardisia shweliensis*, W. W. Sm. Sp. nov.**

Species affinis *A. macrocarpae*, Wall. et *A. maculosae*, Mez; a priore foliis multo longioribus et latioribus acuminatis margine vix crispatis inter alia signa differt; ab altera foliis latioribus, inflorescentiis paucifloris, floribus majoribus inter alia divergit.

Frutex 1–2 m. altus; rami glabri; ramuli florigeri graciles 8–10 cm. longi parce vel vix punctulati, ad apicem folia 2–3 gerentes. Folia petiolo ad 1 cm. longo glabro praedita; lamina plerumque 8–16 cm. longa, 4–7 cm. lata, oblongo-elliptica vel lanceolato-elliptica, apice mediocriter acuminata, basi cuneata, margine remotiuscule crenata plana vix crispata, membranacea, utrinque glabra; costa conspicua nervis 10–15-jugis subtus satis eminentibus; glandulae typicae subgeneris *Crispardiisiae*, Mez conspicuae subremotae una cum punctulis numerosis marginem sequentibus; lamina subtus punctulis nigris saepius elongatis dense notata. Inflorescentiae terminales, pauciflorae (6–12-florae), umbelliformes, glabrae; pedunculus circ. 5 mm. longus; pedunculi secondarii 3–4, circ. 5 mm. longi pedicellis 1 cm. longis punctatis multo breviores; bracteae 2–3 mm. longae, ovatae vel oblongae, obtusae, dense nigro-punctatae. Flores ante anthesin circ. 7 mm. longi glabri. Sepala circ. 2 mm. longa, oblonga, obtusa, nigro-punctata et -striata. Petala circ. 8 mm. longa, ovato-lanceolata, acuta, alba, maculata. Stamina petalis paulo breviora antheris acutis, dorso distincte punctulatis, filamentis brevibus. Ovarium ovoidem punctatum stylo corollam subaequante. Fructus deest.

"China:—Shweli valley, Yunnan, amongst scrub. Lat. 25° N. Alt. 5000–6000 ft. Shrub of 3–6 ft. Flowers white, spotted dull lake-crimson; anthers golden. May 1912." G. Forrest. No. 7934.

***Arenaria salweenensis*, W. W. Sm. Sp. nov.**

Species ex affinitate *A. inornatae*, W. W. Sm. a qua habitu elatiore, foliis supra scabridule pustulosis, inflorescentiis amplis praeter alia signa divergit.

Planta perennis 12–20 cm. alta. Radix elongata fusiforme-incrassata. Caules 3–4 vel nonnunquam multo numerosiores plus minusve erecti, pilis articulatis fulvidis vel nigridis plus minusve dense pubescentes. Folia in petiolum vix discretum latiusculum margine ciliatum attenuata, 3–5 cm. longa, 5–7 mm.

lata, lineari-oblonga, apice acutiuscula, margine angustissime scariosa, utrinque glabra nisi ad partem petiolarem, supra scabridule papillosa, costa media conspicua translucente, nervis valde obscuris. Inflorescentiae dichotome ramosae ultimo in cymas trifloras abeuntes; flores albi roseo-suffusi; pedicelli ad 1.5 cm. longi pilis articulatis nigridis dense induti; bracteae lanceolatae foliis similes sed breviores. Sepala exteriora circ. 5 mm. longa, 1.5 mm. lata, oblonga, obtusiuscula, margine sparsim nigro-ciliolata, apice atro-rubescens, interiora late scarioso-marginata. Petala 1 cm. paulo superantia, obovata, apice obscure erosa. Stamina 10 calycem subaequantia filamentis glabris basi glanduliferis. Ovarium 2 mm. longum stylis duobus circ. 2 mm. longis instructum. Fructus deest.

"West China:—N'Maikha-Salween divide, Yunnan, on stony pasture and humus-covered boulders in side valleys. Lat. 26° 25' N. Alt. 10,000 ft. Plant of 5-8 inches. Flowers white, faintly stained rose-pink. Aug. 1919." G. Forrest. No. 18,474.

Aristolochia Delavayi, Franch., var. *micrantha*, W. W. Sm.
Var. nov.

A type floribus duplo minoribus differt.

"West China:—Mountains of the Chungtien plateau, Yunnan, in open stony pasture. Lat. 27° 30' N. Alt. 11,000 ft. Plant of 6-14 inches. Flowers dull olive-green. July 1914." G. Forrest. No. 12,637.

This can be compared with nothing in the Chinese flora but *A. Delavayi*, Franch., which I have not seen. It agrees well with the description, except that Franchet gives a length of 5-6 cm. to the calyx of his species. In Forrest's plant it does not exceed 2.5 cm.

Artemisia Forrestii, W. W. Sm. Sp. nov.

Species affinis *A. Campbellii*, Hook. f. et Thoms. a qua foliorum segmentis primariis lineari-oblongis integris, involucri phyllis glabris haud lanosis inter alia differt. Planta inodora e radice crassa lignosa orta ad 75 cm. alta. Caulis erectus sat robustus infra simplex, in dimidio superiore bene ramosus ramis elongatis suberectis, tomento albido dense indutus. Folia radicalia delapsa; caulina numerosa caulem subcelantia 2-4 cm. longa simpliciter pinnatisecta, segmentis vulgo 5 remotiusculis vel saepe approximatis atque folia 5-fasciculata simulantibus lineari-oblongis vel loriformibus circ. 2 cm. longis, 2 mm. latis subacutis undique dense albido-lanato-tomentosis. Inflorescentiae numerosae paniculatae ramulos terminantes circ. 6 cm.

longae capitulis parvulis circ. 2.5 mm. diametro in racemos breves dispositis, foliis regionis floralis caulinis subsimilibus sed minoribus saepe fere simplicibus. Capitula heterogama ad 1 mm. pedunculata; involuci phylla exteriora concava suborbicularia vel elliptica circ. 2 mm. longa obtusa late scariosa glabra, interiora paulo angustiora latius scariosa; flores pauci 8-10, vix 2 mm. longi receptaculo nudo. Achaenia haud matura.

"West China:—Da-gu Shan, Yunnan, on open dry hillsides. Lat. $27^{\circ} 40'$ N. Alt. 10,000-11,000 ft. Plant of 20-30 inches. Phyllaries green; flowers dull brown. Oct. 1918." G. Forrest. No. 17,082.

"Mountains in the N.E. of the Yangtze bend, Yunnan, on open stony pasture. Lat. $27^{\circ} 45'$ N. Alt. 11,000 ft. Plant of 12-16 inches. Flowers? July 1913." G. Forrest. No. 10,506.

Campanula calcicola, W. W. Sm. Sp. nov.

Species affinis *C. crenulatae*, Franch. et *C. chrysosplenifoliae*, Franch.; a priore habitu graciliore, foliis bene hirsutis membranaceis, floribus minoribus, calycis lobis ovarium subaequantibus inter alia distinguitur; ab altera ex descriptione caule piloso, corolla calycem multo superante praeter alia signa divergit.

Planta 5-10 cm. alta. Rhizoma crassum perpendiculare apice vaginis petiolisque emarginis bene onustum. Caules plures 2-7, erecti vel suberecti, flexiles, simplices, uniflori, pilis longis patentibus albis undique induti. Folia basilaria plura petiolo albo-piloso 2-8 cm. longo munita; lamina suborbicularis vel late ovata, 1.2-1.8 cm. diametro, apice rotundata, basi lobis rotundatis distincte cordata, margine obscure undulato-crenata, in sicco membranacea, supra pilis appressis paleaceis multis instructa, infra minus dense; caulina infima basilaribus subsimilia sed minora, superiora lanceolata circ. 5 mm. longa breviter petiolata integra vel obscure denticulata longe albo-pilosa, suprema inter se remota fere subulata. Calycis segmenta 3-4 mm. longa, lineari-lanceolata, erecta, infra denticulis atris binis notata sparsim albo-pilosa. Corolla coerulea calyce multo longior ad 15 mm. longa, ad tertiam partem lobata, lobis ovatis paulo acutatis. Ovarium 3-4 mm. longum pilis longis patentibus albis dense obsitum. Capsula matura deest.

"West China:—Mountains of the Yungning-Yangtze divide, Yunnan, on ledges of dry limestone cliffs. Lat. $27^{\circ} 40'$ N. Alt. 10,000-11,000 ft. Plant of 2-4 inches. Flowers blue. July 1914." G. Forrest. No. 13,081.

The following is dwarfer with glabrescent ovary and calyx teeth:—

"Mountains N.E. of the Chungtien plateau, Yunnan, on ledges of limestone cliffs. Lat. $27^{\circ} 40'$ N. Alt. 13,000 ft. Plant of 2-3 inches. Flowers deep blue. Aug. 1914." G. Forrest. No. 13,108.

This new species is a much smaller plant than the glabrous and glaucous *C. crenulata*, Franch. It approaches *C. chrysosplenifolia*, Franch., but differs according to the description in the simple long-pilose stems, in the caudate leaves, and in the relative lengths of calyx-lobes, ovary, and corolla. It may however be an extreme form of that species.

***Ceropegia aridicola*, W. W. Sm. Sp. nov.**

Species affinis *C. Balfouriana*, Schltr. a qua habitu, foliis cordatis subsagittatis, floribus duplo minoribus inter alia signa differt.

Planta 15-20 cm. alta vel ex collectore nonnunquam ad 50 cm. attingens; caudex tuberosus ad 3 cm. diametro saepe subglobosus; radices elongatae carnosae. Caules 1-2-nati, ut videtur plus minusve decumbentes flexuosi gracillimi ramosi laxe foliati, basi nudi, pilis brevibus crispatis albidis bene muniti. Folia petiolo 4-6 mm. longo crispato-piloso praedita; lamina vulgo 0.5-1.5 cm. longa, 3-10 mm. lata, anguste triangularis, apice acuminata, basi cordata atque subsagittata, margine integra vel paulo undulata, paulo carnosula, supra pilis crispatis scabridule conspersa infra subglabra, costa media conspicua pilosula, nervis lateralibus obscuris. Flores ex axillis superioribus fere omnibus 1-3-nati saepe solitarii; pedicelli 3-10 mm. longi pilosuli. Calycis 3-4 mm. longi lobi linear-lanceolati acuminati glabri vel pilis paucis conspersi. Corolla circ. 1.5 cm. longa, e basi subgloboso-inflata ibique circ. 4 mm. lata, in tubum circ. 5 mm. longum producta, extra sparsim pilosula intus glabra; lobi circ. 5 mm. longi ovato-lanceolati vel subrhomboidei extra pilis perpaucis praediti intus glabri; corona poculiformis foliolis ovatis obtusis glabris vix 1 mm. longis, ligulis linear-spathulatis erectis glabris 2-3 mm. longis tenuissimis purpureo-tinctis. Folliculi maturi circ. 4.5 cm. longi, seminibus 5 mm. longis nigridis albo-comosis.

"West China:—Mountains in the N.E. of the Yangtze bend, Yunnan, on dry stony pasture. Lat. $27^{\circ} 45'$ N. Alt. 10,000 ft. Plant of 6-8 inches. Flowers greenish-white, tinged purplish at apex. July 1913." G. Forrest. No. 10,549.

"N.W. flank of the Lichiang Range, Yunnan, on open stony pasture. Lat. $27^{\circ} 30'$ N. Alt. 10,000 ft. Plant of 9-20 inches. Flowers yellowish-green and red-purple. July 1914." G. Forrest. No. 12,794.

"Mekong-Salween divide, Yunnan. Lat. $28^{\circ} 10'$ N. Alt. 10,000 ft. Sept. 1914." G. Forrest. No. 13,394.

Ceropegia dolichophylla, Schltr., var. *purpureo-barbata*,
W. W. Sm. Var. nov.

A typo corollae lobis intus pilis vesiculosis longis pallido-purpureis vestitis differt.

"West China:—Mekong valley, Yunnan, on grass and dwarf scrub in stony situations. Lat. $27^{\circ} 40'$ N. Alt. 8000-9000 ft. Scendent plant of 2-3 ft. Flowers green and purple-maroon. Aug. 1914." G. Forrest. No. 13,024.

"On the Tong Shan, Yunnan, in open dry situations amongst rocks. Lat. $27^{\circ} 20'$ N. Alt. 8000 ft. Scendent plant of 3 ft. Flowers yellow, green at base, deep magenta-rose at apex and fringed. July 1914." G. Forrest. No. 12,738.

Ceropegia monticola, W. W. Sm. Sp. nov.

Species affinis *C. pubescens*, Wall. a qua pedunculis brevibus hirsutulis, corollae lobis intus longe albo-pilosis inter alia recedit; affinis autem *C. Arnottiana*, Wight et *C. macrantha*, Wight quae foliorum corollaeque forma differunt.

Planta scandens 60-150 cm. alta; radix non visa. Caulis valde flexuosus ramosus laxe foliatus pilis albidis patentibus bene conspersus. Folia petiolo circ. 1 cm. longo hirsutulo suffulta; lamina majorum 4-8 cm. longa, 3-5 cm. lata, plus minusve late ovata, apice breviter acuminata, basi vulgo rotundata, margine ciliata, in sicco membranacea, supra pilis appressis bene instructa, infra glabra nisi ad costam prominulam sparsim pilosulam. Pedunculus vulgo brevis nunc 4-15 mm. longus multiflorus hirsutulus; pedicelli 5-10 mm. longi subumbellati glabri. Calycis 5 mm. longi lobi subulato-lineares glabri. Corolla circ. 3.8 cm. longa extra glabra, tubo circ. 2.2 cm. longo basi distinete inflato fauce multo ampliato, lobis 1.6 cm. longis lineari-lanceolatis intus longe albo-pilosis; coronae lobi 10 lanceolati acuminati ciliati ligulis duplo longioribus linearibus erectis minutissime pilosulis.

"West China:—Mountains in the N.E. of the Yangtze bend, Yunnan, on grass on the margins of pine forests. Lat. $27^{\circ} 45'$ N. Alt. 11,000 ft. Scendent plant of 2-3 ft. Flowers yellowish-green and maroon. Aug. 1913." G. Forrest. No. 10,944.

"Bei-ma-shan, Mekong-Yangtze divide, Yunnan, on scrub amongst boulders. Lat. $28^{\circ} 20'$ N. Alt. 10,000 ft. Scendent plant of 2-5 ft. Flowers deep livid maroon-purple. Aug. 1914." G. Forrest. No. 13,198.

Ceropegia muliensis, W. W. Sm. Sp. nov.

Species ex affinitate *C. angustifoliae*, Wight a qua corollae lobis linearibus praeter alia signa differt; a *C. pubescente*, Wall. foliis anguste lanceolatis, corolla duplo minore recedit.

Planta scandens 30-60 cm. alta; tubera non visa, ex collectore indigenarum cibaria; radices carnosae elongatae. Caulis valde flexuosus gracilimus ramosus laxe foliatus basi nudus indumento crispulo bene indutus. Folia petiolo circ. 1 cm. longo crispato-pilosulo praedita; lamina majorum 10-13 cm. longa, 2-3 cm. lata, anguste lanceolata, apice longe acuminata, basi cuneata, in sicco membranacea, supra pilis parvis crispatis conspersa, infra glabra, costa media eminenti pilosula excepta. Pedunculus ad 4 cm. longus pilosulus multiflorus; pedicelli circ. 1 cm. longi subumbellati glabri vel pilosuli. Calycis 3-4 mm. longi lobi lineari-lanceolati acuminati glabri. Corolla fere 3 cm. longa glabra, tubo 2 cm. longo gracillimo ad medium vix 1 mm. lato basi paulo inflato fauce vix ampliato lobis linearibus circ. 9 mm. longis; coronae lobi minimi ovati acuminati ciliati; ligulae lineares erectae duplo vel triplo longiores ciliatae. Folliculi maturi circ. 9 cm. longi.

"West China:—Chungtien plateau, Yunnan, on grass and scrub in open situations. Lat. 27° 30' N. Alt. 9000 ft. Scandent plant of 3-4 ft. Flowers olive-green, flushed maroon at base. Aug. 1914." G. Forrest. No. 13,117.

"Muli Mountains, S.W. Szechwan, on grass and dwarf scrub. Lat. 28° 12' N. Alt. 10,000 ft. Scandent plant of 2-4 ft. Flowers purple and green. Tubers eaten by natives. Aug. 1918." G. Forrest. No. 16,648.

Cleome yunnanensis, W. W. Sm. Sp. nov.

Species inter affines asiaticas foliis trifoliatis, caulibus petiolisque foliisque inflorescentiisque glandulosis, staminibus sex, disco unilaterali inter alia bene notata.

Planta herbacea erecta ad 60 cm. alta. Caules in specimine nostro tres e basi lignosa orientes capillis patentibus glandulosocapitatis densissime induti. Folia alterna petiolo 4-6 cm. longo dense glanduloso suffulta; foliola tria, sessilia vel fere sessilia, plerumque 5-7.5 cm. longa, 2-2.5 cm. lata, lanceolata, apice acuminata, basi asimmetrice cuneata, supra sparsim pilosula, infra ad costam nervosque glanduloso-pilosula, margine glanduloso-ciliata, texturā in sicco membranacea. Inflorescentia terminalis multiflora corymboso-racemosa; pedicelli inferiores 1-1.5 cm. longi dense glandulosi; flores vix bene evoluti virides vel flavid-virides. Sepala 4, lanceolata, acuta, circ. 3 mm. longa, viridia, extra et ad margines dense glandulosa.

Petala 4, obovata, apice plus minusve obtusa, circ. 4 mm. longa (vix perfecte evoluta), glabra, flavidō-viridia. Discus in structuram carnosulam circ. 0.5 mm. longam unilateraliter productus. Stamina 6, antheris circ. 2 mm. longis, filamentis 1 mm. longis. Ovarium sessile filamenta staminum paulo superans, stylo nullo.

"China:—Chungtien plateau, Yunnan, in open pasture. Lat. $27^{\circ} 30'$ N. Alt. 11,000 ft. Plant of 2 ft. Flowers green. June 1917." G. Forrest. No. 13,762.

This *Cleome* occurs at a remarkable elevation for the genus and is apparently the only one recorded from Yunnan.

***Cremanthodium angustifolium*, W. W. Sm. Sp. nov.**

Species capitulo discoideo praedita; a speciebus ejus modi, *C. discoideo*, Maxim., *C. caloto*, Diels, *C. campanulato* (Franch.), Diels, *C. cucullifero*, W. W. Sm. foliis praelongis linearilanceolatis facile distinguitur.

Planta 25–50 cm. alta radicibus carnosulis multis munita. Folia radicalia numerosa congesta erecta praelonga, ad 24 cm. longa, 1.5–2 cm. lata, linearilanceolata, apice acuta vel subacuta, basi vix petiolata sed in partem vaginiformem membranaceam lamina paulo latiore ampliata, alutacea, utrinque glabra, in sicco pallido-viridia, costa media subconspicua, nervis secundariis vulgo 4–6 costae subparallelis subobscuris, reticulatione ultima evanescente; folia caulina vulgo 3, sessilia, 5–9 cm. longa, forma atque textura basilaribus subsimilia; ad apicem caulis et sub capitulo apparent folia 2–3 bracteiformia, 1–1.5 cm. longa, linearia vel subulata. Caulis ipse capitulo solitario terminatus, infra glaber, supra pilis albidis vel fulvidis gradatim villosior, apice villosissimus. Capitulum discoideum, in sicco complanatum circ. 3 cm. diametro; involuci phylla 12–13 mm. longa, circ. 2 mm. lata, lanceolata, acuta vel acuminata, pilis fulvidis vel subrufescensibus praesertim ad medium dense induta, in vivo saturate atro-kermesina, in sicco nigrida. Flores disci aurantiaci; corolla circ. 8 mm. longa; pappus sordide albus corollam subaequans. Achaenia immatura circ. 2 mm. longa oblonga glabra.

"West China:—Mountains in the N.E. of the Yangtze bend, Yunnan, in open stony pasture. Lat. $27^{\circ} 45'$ N. Alt. 12,000 ft. Plant of 12–16 inches. Florets dull orange; phyllaries deep black-maroon. July 1913." G. Forrest. No. 10,653.

"Mountains of the Chungtien plateau, Yunnan, in open stony pasture. Lat. $27^{\circ} 30'$ N. Alt. 14,000 ft. Plant of 10–20 inches. Florets fragrant, deep ruddy orange; phyllaries dull black-crimson. July 1914." G. Forrest. No. 12,809.

The elongated linear-lanceolate leaves and discoid capitulum make this species a very distinct one in the genus.

Cremanthodium bulbilliferum, W. W. Sm. Sp. nov.

Species affinis *C. Decaisnei*, Clarke a quo foliis caulinis 3-4 magnopere vaginatis atque bulbilliferis divergit.

Planta ad 30 cm. alta radicibus carnosulis multis praedita. Caulis sat validus infra puberulus et subglabrescens, supra ad capitulum solitarium dense nigrido-villosulus. Folia radicalia pauca, sub anthesin 2-3, petiolo ad 11 cm. longo glabro suffulta; lamina reniformis 3-5 cm. diametro, apice bene rotundata, basi alte cordata, margine laticrenata, crenaturis abrupte apiculatis, in sicco papyracea, utrinque glabra vel margine et ad insertionem petioli pilis rarissimis praedita, supra laete viridis, infra saepe purpurascens, nervis palmatim dispositis utrinque subconspicuis; folia caulina 3-4 plus minusve orbicularia supra decrescentia, 1.5-3 cm. diametro, vagina valde dilatata saepe laminam aequante praedita, petiolo ipso nunc ad 1.5 cm. longo nunc obsoleto; lamina ei foliorum radicalium similis; bulbilli plures ovoidei circ. 4 mm. longi in vagina inclusi. Capitulum 3 cm. longum, in sicco ad 3 cm. latum; involuci phylla uniseriata ad 12, circ. 2 cm. longa, 4 mm. lata, oblonga, apice acuta saepe paulo fimbriata, extra pilis nigridis conspersa. Flores aurantiaci; disci florum corolla circ. 8 mm. longa; ligulae ad 2.5 cm. longae, circ. 7 mm. latae, anguste oblanceolatae 2-3-dentatae; pappus 8 mm. longus albus; stigmata vix apice incrassata; achaenia oblonga haud matura glabra.

"West China:—On Doker-la, Mekong-Salween divide, Yunnan, in open alpine meadows. Lat. 28° 20' N. Alt. 13,000 ft. Plant of 9-12 inches. Ray florets dull orange, disc florets a deeper shade. Bulbils in axils of stem foliage. Aug.-Sept. 1918." G. Forrest. No. 17,229.

This species is closely allied to *C. Decaisnei*, Clarke and *C. reniforme*, Benth., differing chiefly in the huge vaginae of the more numerous cauline leaves with enclosed bulbils. Its marked pubescence distinguishes it further from the latter.

Cremanthodium calcicolum, W. W. Sm. Sp. nov.

Inter species discoideas foliis basilaribus reniformibus longiusculae petiolatis atque vaginatis, caulinis latissime vaginatis, involuci phyllis glabris vel subglabris bene distincta.

Planta 20-30 cm. alta radicibus carnosulis multis praedita. Folia radicalia pauca, sub anthesin 1-3, vagina 5-8 cm. longa latiuscula praedita, petiolo 5-7 cm. longo glabro suffulta; lamina reniformis vel suborbicularis 3-5 cm. diametro apice bene

rotundata, basi alte cordata, margine laticrenata, crenaturis obscure apiculatis, in sicco papyracea, utrinque glabra, supra laete viridis, infra multo pallidior subglauca, nervis palmatim dispositis infra subconspicuis; folia caulina 1-2, vagina ampla latissima saepe lamina multo majore instructa, petiolo 1-2 cm. longo, lamina reniformi 2-4 cm. diametro; nonnunquam folium supremum ovatum, quasi vagina sine lamina; sub capitulo folia bracteiformia linearia 1-2 nunc inveniuntur. Caulis ipse capitulo solitario terminatus, infra glaber, supra gradatim fulvido-hirsutior, sub capitulo satis dense. Capitulum discodeum, in sicco 2-2.5 cm. diametro, basi sparsim villosulum; involucri phylla ad 1 cm. longa, 3-4 mm. lata, oblonga, obtusa vel subacuta, glabra vel subglabra, in vivo atro-kermesina, in sicco nigrida. Flores disci aurantiaci; pappus fulvidus 4-5 mm. longus; achaenia immatura glabra.

"West China:—Mountains of the Chungtien plateau, Yunnan, on ledges of limestone cliffs and on limestone screes. Lat. $27^{\circ} 30'$ N. Alt. 14,000 ft. Plant of 7-12 inches. Phyllaries dull black-crimson; florets dull orange. July 1914." G. Forrest. No. 12,711.

Cremanthodium Farreri, W. W. Sm. Sp. nov.

Species affinis *C. reniformi*, Benth. et *C. Decaisnei*, Clarke; a priore foliis subtus araneoso-villosis differt; ab altero habitu elato, foliis caulinis pluribus recedit; ab ambobus floribus albis deinde vinosis distinguitur.

Planta ad 50 cm. alta. Radices non visae. Caulis erectus sat validus simplex primum tomento albido-araneoso detersili praeditus. Folia radicalia ex speciminibus haud bonis sejuncta petiolo ad 10 cm. longo basi late vaginato suffulta; lamina 4-5 cm. longa, circ. 4 cm. lata, ovata, apice plus minusve obtusa, basi subtruncata, margine dentato-crenata, papyracea, supra glabra, infra araneoso-tomentosa, nervis subpinnatim dispositis nec radiatim divergentibus; folia caulina 3-4, inferiora 1-2 petiolo ad 10 cm. longo atque vagina ampla praedita (vagina nonnunquam foliacea margine dentata subtus araneoso-tomentosa), superiora 1-2 nunc vagina amplissima dentata instructa, petiolo deficiente, vel sessilia basi plus minusve amplexicaulia; lamina inferiorum reniformis ad 4 cm. longa, ad 7 cm. lata, dentibus apiculatis dentata infra araneoso-tomentosa nervis subradiatim excurrentibus; folia bracteiformia sub capitulo vulgo desunt, caule superiore longe nudo. Capitulum solitarium nutans circ. 4 cm. diametro basi albido-tomentellum; involucri phylla circ. 20, ad 18 mm. longa, 3-7 mm. lata, ovato-lanceolata ad lineari-lanceolata, acuta vel acuminata, infra tomenti floccis induita, supra sparsius, in sicco nigrescentia; ligulae ad 2.8 cm.

longae, lanceolatae vel ovato-lanceolatae, apice vulgo 2-3-dentatae, albae; disci florum corolla circ. 8 mm. longa; pappus 5-7 mm. longus albus. Achaenia matura circ. 4 mm. longa, suboblonga 10-costata brunnea.

"Upper Burma:—Chimili Alps. Alt. 12,500-13,000 ft. Local but locally abundant in dips and dells of the longer high-alpine grass. A stately species with pendulous globular-looking flowers of pure white, that deepen to dark dull claret-colour as they die. Aug. 1919." Farrer. No. 1178.

I am unable to refer the above species to any Himalayan or Chinese variation of *C. reniforme*, Benth. or *C. Decaisnei*, Clarke. In some respects it shows an approach to *C. Delavayi*, Franch.

Cremanthodium suave, W. W. Sm. Sp. nov.

Species affinis *C. Heliantho* (Franch. sub *Senecione*) a quo foliis basilaribus lineari-lanceolatis longe petiolatis, caulinis subpatentibus, ligulis altiusculae dentatis recognoscitur.

Planta 20-40 cm. alta, radicibus multis fibrosis instructa. Caulis gracilis elatus basi petiolis vetustis ad fibras reductis indutus, glaber, capitulo solitario nutante terminatus. Folia radicalia vulgo 4-7, petiolo 4-6 cm. longo plus minusve alato atque a lamina vix discreto suffulta; lamina 12-18 cm. longa, 2-2.5 cm. lata, lineari-lanceolata, apice acuta vel subacuta, basi longe cuneata, integra, in sicco tenuiter papyracea vel submembranacea, utrinque glabra, pallido-viridis, infra pallidior sed vix glauca, costa media conspicua, nervis secundariis angulo 20°-30° abeuntibus tenuibus; caulinis vulgo 4-6 sessilia, 3-9 cm. longa, lanceolata, supra decrescentia; supremum involucrum phyllis approximatum eisque simillimum. Capitulum 4-5 cm. longum, in sicco ad 2.5 cm. latum; involucrum phylla subbiseriata, exteriora 5-6 ovata vel ovato-lanceolata, 1.5-2 cm. longa, ad 1.2 cm. lata, obtusa vel acuta, pallido-viridia, glabra, interiora 4-6 breviora, 3-5 mm. lata, lanceolata, acuta, glauca, glabra. Flores fragrantes aurantiaci; disci florum corolla circ. 8 mm. longa; ligulae circ. 3 cm. longae, lineari-lanceolatae, acuminatae, altiusculae 3-4-dentatae; pappus 4 mm. longus albus; achaenia oblonga 3.5 mm. longa, sulcata, glabra.

"West China:—Mu-li Mountains, Szechwan, in open stony pasture on the margins of pine forests. Lat. 28° 12' N. Alt. 12,000 ft. Plant of 9-16 inches. Flowers fragrant, golden-yellow. Aug. 1918." G. Forrest. No. 16,796.

"Duplicate of Forrest No. 16,796 in fruit. Sept. 1918." G. Forrest. No. 17,010.

A rival of *C. Helianthus* (Franch.) and *C. nobile* (Franch.), Diels, possessing the same fragrance.

Dianthera sinensis, W. W. Sm. Sp. nov.

Species affinis *D. collinae*, Clarke a qua sepalis glandulosopilosis inter alia signa differt.

Planta herbacea circ. 1 m: alta basi procumbens nodis radicans, deinde erecta vel suberecta. Caules sulcati pilis crispatis plus minusve dense induti. Folia petiolo ad 2.5 cm. longo crispato-piloso suffulta; lamina foliorum majorum 6-8 cm. longa, 4-4.5 cm. lata, ovata, apice acuminata vel nunc obtuse breviterque angustata, basi breviter et late cuneata, membranacea, laete viridis, utrinque pilis paleaceis conspersa, nervis tenuibus circ. 8-jugis. Flores in paniculam terminalam compositi, albi, pro genere magni; axis dense albido-pilosa; bracteae ultimae et bracteolae lineares 2-3 mm. longae; pedicelli pilosi longiores ad 5 mm. longi. Calyx viridis pilis longiusculis glanduloso-capitatis patentibus conspersus fere ad imum in lobos lineares divisus, circ. 6 mm. longus. Corolla circ. 2.5 cm. longa, glabra, bilabiata, labio inferiore maculis brunneoflavidis ornato. Stamina 2 filamentis glabris antheris muticis altero altius affixo, polline globoso minutissime echinato. Ovarium glabrum stylo glabro, stigmate subcapitato obscurissime bilobulo. Fructus simillimus ei *D. leptostachyae*, Benth. circ. 12 mm. longus, seminibus quatuor.

"West China:—Shweli-Salween divide, Yunnan, in open situations amongst rocks. Lat. 25° 20' N. Alt. 9000 ft. Plant of 3-4 ft. Flowers creamy-white. July 1918." G. Forrest. No. 17,574.

This species is closely allied to *Justicia* and the species of *Dianthera* which appear in Hooker's Flora Brit. Ind., iv (1885), 542. In its large pedicelled flowers it comes nearest to *D. collina*, Clarke. The anther-cells are also superposed by almost the entire length of the anther. Later, in King and Gamble's Materials for a Flora Malay. Penins., Clarke instituted a new genus *Leda* in which he placed the Indian and Malayan species of *Dianthera*, keeping them apart from the American species. I do not find that *D. sinensis* quite conforms to the characters laid down by Clarke for *Leda*. The pollen of this species is globose, not ellipsoid, and minutely echinate. It has the pollen neither of *Justicia* nor of *Leda*. The material available of the allied species is not sufficient to warrant a definite decision and I am meanwhile relegating the plant to the genus *Dianthera* as characterised in the Genera Plantarum and the Flora of British India.

Elsholtzia pygmaea, W. W. Sm. Sp. nov.

Species affinis *E. Bodinieri*, Vaniot a qua habitu annuo, foliis sublinearibus, bracteis diversis inter alia recedit.

Herba annua 2.5-7 cm. alta, erecta, simplex nisi in regione florali; caulis basi nudus foliis sub inflorescentiam approximatis, strigosulus. Folia petiolo 2-3 mm. longo haud bene discreto praedita; lamina 1-1.5 cm. longa, circ. 2 mm. lata, sublinearis vel lineari-lanceolata, apice subacuta, basi gradatim attenuata, margine obscure et remote serrulata, papyracea, utrinque pilis scabridulis conspersa, infra saepe purpurascens. Inflorescentia spiciformis simplex vel nonnunquam ramulis lateralibus duobus praedita, bracteis conspicuus gaudens. Bractae circ. 4 mm. longae, 2.5 mm. latae, imbricatae, ovatae, apice cuspidatae, sparsim pilosulae, margine albo-ciliatae. Calyx 2 mm. longus, bracteis celatus, minute pilosulus, dentibus triangularibus acutis tubum fere aequantibus. Corolla circ. 8 mm. longa roseo-purpurea, infra albescens, sparsim pilosula, tubo cylindrico haud gibboso lobis saltem duplo longiore, lobo inferiore breviter quadrilobo. Stamina stylusque longiuscule exserta.

"West China:—Da-gu Shan, Yunnan, in open stony pasture. Lat. $27^{\circ} 40'$ N. Alt. 10,000 ft. Plant of 1-2 inches. Flowers deep rose-purple. Oct. 1918." G. Forrest. No. 17,128.

A tiny plant recalling some of the dwarf forms of *Elsholtzia strobilifera*, Benth.

Fraxinus suaveolens, W. W. Sm. Sp. nov.

Species sectionis *Orni*, affinis *F. floribunda*, Wall. et *F. retusae*, Champ. a quibus foliolis lateralibus brevissime petiolatis, petiolulis ipsis dense ferrugineo-tomentosis inter alia differt.

Arbor vel frutex 7-17 m. altus; rami hornotini mediocriter robusti paulo complanati rubidi glabri vel hic illic tomento ferrugineo conspersi, annotini cinerascentes lenticellis parvis albidis notati. Folia plerumque 3-juga, nonnunquam 1-2-juga longe petiolata; petioli ad 10 cm. longi subteretes glabri vel reliquis tomenti tenuissimi ferruginei conspersi; petioluli laterales 1-2 mm. longi vel subobsoleti dense ferrugineo-tomentosi, medianus 5-15 mm. longus sub anthesin plus minusve ferrugineo-tomentosus; rhachis petiolo excluso circ. 10 cm. longa hic illic tomento detersili praedita; foliola (medianum plerumque paulo majus) 8-12 cm. longa, 2.5-4 cm. lata, lanceolata, apice longe acuteque acuminata, basi late cuneata vel oblique subrotundata, in sicco membranacea, per marginem totam regulariter crenato-denticulata, supra atroviridia glabra infra pallidiora ad costam ferrugineo-tomentosa ibique tandem glabrescentia ceteroquin glabra; nervi plerumque 10-12 paria supra inconspicui infra paulo eminentes. Inflorescentia ut in *F. floribunda*, ampla, floribus pallido-flavidis fragrantibus; axes glabri vel glabrescentes rubidi; pedicelli circ. 2 mm. longi glabri. Calyx circ. 1 mm. longus campanulatus glaber dentibus

brevibus. Petala circ. 3 mm. longa linearis-oblonga. Stamina corollam paulo superantia. Fructus (si specimen Forrestianum num. 15,015 hoc recte allocatum) circ. 2.2 cm. longus, linearispathulatus, apice rotundatus saepe retusus supra medium 4 mm. latus, basi calyce persistente inclusus 1 mm. latus.

"West China:—Western flank of the Lichiang Range, Yunnan, in mixed forests. Lat. 27° N. Alt. 10,000-11,000 ft. Tree of 40-50 ft. Flowers creamy-yellow, fragrant. May 1917." G. Forrest. No. 13,797.

"Mu-li Mountains, S.W. Szechwan, in open mixed forests. Lat. 28° 12' N. Alt. 9000 ft. Shrub or tree of 20-40 ft. Flowers creamy-yellow, fragrant. June 1918." G. Forrest. No. 16,462.

"S.E. Tibet:—Doker-la, Mekong-Salween divide, Tsarong province, in mixed forests. Lat. 28° 25' N. Alt. 10,000 ft. Shrub or tree of 30-45 ft. Flowers fragrant, creamy-yellow. June 1918." G. Forrest. No. 16,552.

"Mekong-Salween divide, Yunnan, in open mixed and pine forests. Lat. 28° 12' N. Alt. 10,000-11,000 ft. Tree of 30-40 ft. In fruit. Oct. 1917." G. Forrest. No. 15,015.

This new species is closely allied to *F. floribunda*, Wall., which occurs also in Yunnan.

Impatiens xanthocephala, W. W. Sm. Sp. nov.

Species inter affines chinenses habitu nano, caule simplici, foliorum oppositorum lamina minima, floribus pro planta permagnis laminam foliorum duplo vel triplo superantibus, sepalis 4, alarum lobo distali longe stipitato, labello (cum calcare longo incurvo) purpureo-maculato bene notata.

Herba 5-10 cm. alta, glaberrima, caule simplici gracili basi aphylo. Folia opposita petiolo ad 1 cm. longo saepe purpureo suffulta; lamina ad 1 cm. longa, ad 8 mm. lata, saepe multo minor, ovata, apice obtusa, basi late cuneata vel rotundata, margine pauci-crenata, nervis 2-3 paribus obscuris. Flores cuique plantulae 3-5, in axillis bractearum foliacearum lanceolatarum solitarii; pedicelli ad 1 cm. longi. Flores magni circ. 3.5 cm. expansi saturate aurantiaci, labello calcareo purpureo-maculatis. Sepala 4, exteriora orbicularia, 2 mm. diametro, submembranacea, vix apiculata, costa tenui, 2 interiora multo minora, ovata, membranacea, mutica, costa obsoleta. Vexillum circ. 5 mm. longum, pro flore parvum, valde cucullatum, apice integrum, dorso ecristatum. Alae circ. 2.3 cm. longae sessiles; lobus basalis parvus rotundatus 2 mm. diametro; lobus distalis 5-6 mm. stipitatus, late dolabriformis, apice rotundatus; auricula dorsalis parva inflexa. Labellum infundibuliforme, ore circ. 8 mm. latum apice obtusum, cum calcare incurvo gracili

circ. 1.5 cm. longum. Filamenta linearia; antherae obtusae. Ovarium fusiforme rectum. Fructus deest.

"West China:—In the Mu-li Mountains, S.W. Szechwan, on limestone screes and dry stony pasture. Lat. 28° 12' N. Alt. 11,000–12,000 ft. Plant of 2–4 inches. Flowers deep orange, spur and base spotted purple. Aug. 1918." G. Forrest. No. 16,792.

A very beautiful dwarf species with very conspicuous flowers much larger than the leaves. I cannot at present suggest the nearest affinity for the plant, which is very different from any *Impatiens* I have seen in the herbaria of Kew, Paris, and Edinburgh.

Indigofera Howellii, Craib et W. W. Sm. Sp. nov.

Species ab *I. pendula*, Franch. cui affinis foliis pagina superiore haud glabris floribus minoribus recedit.

Suffrutex; altitudo non nota; ramuli pilis medifixis appressis albidis conspersi fusco-brunnei. Folia plerumque 19–23-foliolata, 9–11 cm. longa, petiolo 2–3 cm. longo pilis appressis sparsim induto suffulta; stipulae circ. 3 mm. longae, anguste lanceolatae acuminatae, fulvido-pilosae; foliola opposita, plus minusve elliptica, apice rotundata vel nunc paululo truncato-retusa, omnia mucrone vix 1 mm. longo munita, basi cuneato-rotundata, 1.5–2.5 cm. longa, 7–11 mm. lata, in sicco tenuiter papyracea, pagina utraque pilis albidis appressis conspersa, costa infra prominente, nervis lateralibus uti reticulatione gracili subtus tantum subconspicuis; petioluli circ. 1 mm. longi albido-pilosii; stipellae inconspicuae. Racemi axillares densi ad 15 cm. longi (in spec. nostris nondum bene evoluti); pedunculus 1–2 cm. longus; bracteae 1 mm. longae lineari-lanceolatae incano-pilosae, cito deciduae; pedicelli 2 mm. longi ut rhachis pilis et albidis et fulvidis induti. Calyx circ. 3 mm. longus pilis appressis incanis bene indutus ad medium in dentes deltoideos acuminatos divisus. Vexillum 9 mm. longum. circ. 6 mm. latum; alae circ. 9 mm. longae, 2.5 mm. latae; carina 8.5 mm. longa.

"West China:—Near Teng-yueh, Yunnan." Howell. No. 15.

"Upper Burma:—Foot of Hpimaw Hill, among light brushwood in boulders by stream. Alt. 6000 ft. Magenta-pink." Farrer. No. 866.

Jasminum dumicolum, W. W. Sm. Sp. nov.

Species habitu *J. dispermi*, Wall. a quo foliis simplicibus inter alia discriminatur; ab *J. attenuato*, Roxb. et *J. glandulosum*, Wall. corollae lobis latis obtusis praeter alia signa distinguitur.

Frutex scandens 2–9 m. altus ramulis gracilibus glabris. Folia opposita petiolo circ. 5 mm. longo canaliculato glabro

instructa simplicia; lamina plerumque 9-16 cm. longa, 3-4 cm. lata, anguste lanceolata vel oblongo-lanceolata, apice caudato-acuminata, basi rotundata, in siccо papyracea, supra subnitida, infra pallidior opaco-viridis, utrinque glabra; costa media conspicua nervis utrinque 12 vel pluribus obscurissimis. Inflorescentiae numerosae axillares et terminales, vulgo multiflorae, cymosae, plerumque foliis axillantibus breviores glabrae; bracteae subulatae 2-3 mm. longae glabrae; pedicelli ad 5 mm. longi crassi erecti. Calyx campanulatus circ. 2 mm. longus glaber dentibus quinque 1 mm. longis deltoideis acutis. Corolla intus alba, extra saturate roseo-kermesina, fragrans, tubo 1.5-1.6 cm. longo basi cylindrico 1.5 mm. lato supra expanso ore 5 mm. lato, lobis late ellipticis circ. 7 mm. longis, circ. 5 mm. latis obtusis. Stamina subexsertae antheris latis circ. 5 mm. longis. Stylus inclusus cum stigmate linguiformi circ. 9 mm. longus. Fructus ellipsoideus circ. 9 mm. longus nigrescens.

"West China:—Shweli-Salween divide, Yunnan, on scrub. Lat. 25° 20' N. Alt. 8000 ft. Scendent shrub of 10-20 ft. Flowers, white interior, exterior deep rose-crimson, fragrant. Feb. 1914." G. Forrest. No. 12,164.

"Hills to the east of Tengyueh, Yunnan, on scrub and trees. Lat. 25° N. Alt. 6000-7000 ft. Scendent shrub of 6-10 ft. Flowers? In fruit. June 1912." G. Forrest. No. 8094.

"Ma-chang-kai Valley, Yunnan, on scrub. Lat. 25° 20' N. Alt. 6000-7000 ft. Scendent shrub of 6-12 ft. Flowers, interior creamy-white, exterior deep dull crimson. March 1913." G. Forrest. No. 9757.

"Shweli Valley, Yunnan, amongst scrub. Lat. 25° N. Alt. 5000-6000 ft. Shrub of 6-10 ft. In fruit. May 1912." G. Forrest. No. 7926.

"Western flank of the Shweli-Salween divide, Yunnan, on trees and scrub in rather shady situations. Lat. 25° 10' N. Alt. 8000-9000 ft. Scendent shrub of 10-15 ft. Flowers, exterior deep crimson-rose, interior white or flushed rose, fragrant. Dec. 1912." G. Forrest. No. 9346.

"Ma-chang-kai Valley, north of Tengyueh, on trees. Lat. 25° 20' N. Alt. 6000 ft. Scendent shrub of 20-30 ft. Flowers, interior white, exterior dull rose, fragrant. Feb. 1913." G. Forrest. Nos. 9531, 15,979.

"Feng chen Lin, S. of Red River, Yunnan, at 7000 ft; large climber, white flowers." Henry. No. 10,634A.

"Mengtsz, S.E. mountain-forests, at 5000 ft; large climber, pinkish flowers." Henry. No. 10,634.

"Szemao, Yunnan, forests to east at 4500 ft; climber, white flowers." Henry. No. 11,708A.

The affinity of this species in spite of the simple leaves is

with *J. dispermum*, Wall. The inflorescences are very similar, but the leaves are very obscurely veined above and below in addition to being simple.

***Jasminum heterophyllum*, Roxb., var. *glabrecymosum*,**
W. W. Sm. Var. nov.

A typo inflorescentiis minoribus glabris, calyce glabro recedit.

"West China:—N.W. Yunnan on the Langhong-Hoching divide, on ledges of limestone cliffs. Lat. $26^{\circ} 16'$ N. Alt. 8000 ft. Shrub of 6–8 ft. Flowers deep golden-yellow, fragrant. May 1913." G. Forrest. No. 9990.

"Yungpe Mountains, Yunnan, in open situations by streams. Lat. $26^{\circ} 45'$ N. Alt. 9000 ft. Erect shrub of 6–8 ft. Flowers? Sept. 1913." G. Forrest. Nos. 11,037 and 11,177.

The same in fruit. Fruits black. Oct. 1913. G. Forrest. No. 11,472.

Mengtsz woods, 5000 ft.; shrub 4 ft.; yellow flowers. Henry. No. 9107B.

Mengtsz woods, 4600 ft.; slender shrubs 4–8 ft.; black fruit. Henry. No. 9107A.

N.W. Yunnan. 1907. Père Monbeig. No. 187.

Lan-nyg-tsin près Lou-lan, Yunnan. May 1904. Pierre Py. No. 487.

***Jasminum pulvinatum*, W. W. Sm. Sp. nov.**

Species ex affinitate *J. nudifloro*, Lindl. et *J. primulino*, Hemsl. a quibus habitu nano pulvinato inter alia divergit.

Fruticulus densissime intricato-ramosus pulvinatus 30–45 cm. altus, ramis crassis cinerascentibus, ramulis quadrangulis viridibus glabris, saepius apice abscissis defoliatis fere subspinoscentibus. Folia opposita, eis *J. nudiflori*, Lindl. subsimilia, trifoliolata, sub anthesi vix evoluta, petiolo 3–4 mm. longo suffulta; foliola 5–7 mm. longa, elliptica vel subobovata, apice obtusa breviter apiculata, basi plus minusve cuneata, membranacea, nisi ad margines minutissime puberulas glabra. Flores numerosi, undique ad superficiem pulvini dispositi, in modum *J. nudiflori* orti. Calyx campanulatus circ. 6 mm. longus, tubo circ. 2 mm. longo, lobis linearis-lanceolatis acutis fere 4 mm. longis glabris. Corolla aureo-flava hypocarteriformis tubo cylindrico circ. 12 mm. longo supra paululo dilatato, lobis plerumque sex 10–11 mm. longis late ellipticis obtusis. Stamina subexserta vel ad medium tubum posita antheris fere 4 mm. longis. Stylus paulo exsertus vel (floribus dimorphis) ad medium tubum attingens stigmate breviter lobato. Fructus deest.

"S.E. Tibet:—Province of Tsarong, on Doker-la, Mekong-Salween divide, in open dry situations on cliffs. Lat. $28^{\circ} 20'$ N. Alt. 9000-10,000 ft. Cushion shrub of 1-1½ ft. Flowers golden-yellow. July 1917." G. Forrest. No. 14,478.

"West China:—Eastern flank of the Bei-ma-shan, Yunnan, on open moorland. Lat. $28^{\circ} 12'$ N. Alt. 14,000-15,000 ft. Stunted almost spinous shrub of 12 inches. Flowers bright yellow. July 1917." G. Forrest. No. 13,834.

This peculiar Jasmine is the alpine equivalent of *J. nudiflorum*, Lindl. It is characterised by its cushion-habit with dense intricate branching.

***Jasminum taliense*, W. W. Sm. Sp. nov.**

Species affinis *J. attenuato*, Roxb. et *J. Seguini*, Lévl.; a priore foliis brevioribus paucinervatis inter alia facile dignoscitur; ab altero inflorescentia diffusa multiflora praeter alia signa ex descriptione removitur.

Frutex scandens 2-4 m. altus ramulis gracilibus teretibus glabris rubidis. Folia opposita petiolo 5-10 mm. longo glabro praedita simplicia; lamina 6-8 cm. longa, 3-3.5 cm. lata, elliptica vel ovato-lanceolata, apice acuta vel breviter acuminata, basi rotundata vel late cuneata, membranacea, utrinque nitida, glabra nisi subtus ad axillas nervorum parce tomentellas; nervi 5-6-jugi, plus minusve conspicui, subtus paulo eminentes. Inflorescentiae plerumque terminales, cymosae, multiflorae, ad 10 cm. latae, glabrae, cymulæ plerumque trifloris; bracteæ subulatae 4-5 mm. longæ glabrae; pedicelli ad 5 mm. longi glabri. Calyx campanulatus circ. 3 mm. longus glaber dentibus quatuor 0.5-1 mm. longis triangularibus acutis vel obtusiusculis. Corolla alba, extra roseo-suffusa, tubo 1.5-1.8 cm. longo angusto, lobis plerumque 7 lineari-oblongis 1-1.2 cm. longis acutis. Staminum antheræa circ. 3 mm. longæ supra medium tubum insertæ. Stylus e tubo exsertus stigmate linguiformi praeditus.

"West China:—Western flank of the Tali Range, Yunnan, on scrub and trees. Lat. $25^{\circ} 40'$ N. Alt. 10,000 ft. Scandent shrub of 6-12 ft. Flowers fragrant, interior creamy-white, exterior flushed carmine. Aug. 1913." G. Forrest. No. 11,667.

"Western flank of the Tali Range, amongst scrub. Lat. $25^{\circ} 40'$ N. Alt. 9000 ft. Semi-scandent shrub of 6-10 ft. Flowers white, flushed rose exterior, fragrant. July 1917." G. Forrest. No. 15,605.

"Szemao, Yunnan, south forests at 5000 ft.; large climber with white flowers." Henry. No. 12,661A.

"Ma chang près Kieou ya pin. Plante cueillie par Paul Ngueou. July 1909." Ducloux. No. 1493.

Lactuca tsarongensis, W. W. Sm. Sp. nov.

Species aliquatenus anomala; habitu nano, capitulo solitario nutante *Cremanthodium* simulante, achaenio vix rostrato bene notata.

Planta 10-30 cm. alta radice elongata sat crassa orta. Caulis gracilis flexuosus glaber. Folia radicalia plerumque 4-6, anguste oblanceolata, 7-10 cm. longa, 1-1.5 cm. lata, apice ambitu rotundata atque abrupte cuspidata vel rarius subacuta, basi in petiolum alatum nunc haud bene discretum attenuata, margine remote et minute denticulata, in sicco membranacea, utrinque glabra, pallido-viridia, costa media conspicua, nervis tenuissimis; folia caulina 1-4, saepius linearia 1-3 cm. longa, nunc infimum ovatum acuminatum sessile; suprema sub capitulo nunc fere subulata. Capitula solitaria vel raro 2, nutantia, 2-3 cm. longa et lata; involuci phylla biseriata vel subtri-seriata, ad 1.5 cm. longa, circ. 4 mm. lata, lanceolata, acuta, glabra nisi ad apicem minutissime puberulum, subglauca. Corolla florum ligulatiorum circ. 2.2 cm. longa, oblonga, apice 5-dentata, aurantiaca; pappus circ. 8 mm. longus sordide albus setis simplicibus; stylus circ. 2 cm. longus ramis stigmatis circ. 2 mm. longis. Achaenia haud matura 2 mm. longa subteretia obscure vel vix costata apice haud rostrata sed paulo angustata glabra.

"S.E. Tibet:—On Doker-la, province of Tsarong, Mekong-Salween divide, on open moist stony pasture. Lat. 28° 20' N. Alt. 11,000 ft. Plant of 4-12 inches. Flowers deep golden-yellow, fragrant. Aug. 1918." G. Forrest. No. 16,871.

A peculiar species recalling in some respects *Lactuca Dubyaea*, Clarke, but without the glandular hairs of that plant.

Since the above was examined Mr. Reginald Farrer has collected in the Chimili Alps, Northern Burma, a *Lactuca* obviously closely allied and probably a rank-growing form with larger leaves and (in the two specimens) three capitula.

forma chimiliensis, W. W. Sm.

Habitu elatiore, caule robusto substricto, foliis majoribus praesertim caulinis, capitulis circ. 3 majoribus a typo differt.

"North Burma:—Chimili Alps in damp alpine meadows and marshes. Alt. 11,500 ft. Aug. 1919." Farrer. No. 1180.

Magnolia mollicomata, W. W. Sm. Sp. nov.

Species ex affinitate *M. obovatae*, Thunb. (*M. hypoleucae*, Sieb. et Zucc.) et *M. officinalis*, Rehder et Wilson a quibus foliis ellipticis apice basique rotundatis infra molliter villosis utrin-

secus circ. 12-nerviis, petiolis densissime cinereo-tomentosis, fructibus anguste cylindricis recedit.

Arbor 18-24 m. alta; ramuli mediocriter crassi primo dense cinereo-tomentosi, tandem glabrescentes; gemmae anguste ovoideae dense fulvo- vel cinereo-tomentosae. Folia decidua petiolo 2-4 cm. longo subtereti densissime cinereo-tomentoso praedita; lamina 16-20 cm. longa, 10-12 cm. lata, elliptica, apice rotundata obscure acuminulata, basi rotundata, membranacea, supra opaco-viridis glabra, infra pallidior molliter cinereo-villosa, ad costam nervosque dense cinereo-tomentosa, nervis utrinsecus 10-12, subitus prominentibus, reticulatione utrinque subconspicua. Flores ignoti. Pedunculus circ. 1.5 cm. longus, crassus, dense fulvo-pilosus; sepala petalaque ex cicatricibus 12; regio staminum circ. 1 cm. longa; gynophorum nullum. Fructus circ. 14 cm. longus, 2.5-3.5 cm. latus, anguste cylindricus, symmetricus nunc apice paulo contortus; carpella congesta circ. 12 mm. longa, 8 mm. lata, ad 3 mm. rostrata extra lenticellis magnis notata; semina 1-2, ovoidea, 10 mm. longa, 7 mm. lata, rubra.

"Western China:—Mekong-Salween divide, Yunnan, in open pine forests. Lat. 28° 12' N. Alt. 12,000 ft. Tree of 60-80 ft. Flowers pink—seen in flower in 1905, flowering May. July 1917." G. Forrest. No. 14,466.

"Kari Pass, Mekong-Yangtze divide, in open forests. Lat. 27° 40' N. Alt. 9000 ft. Tree of 50-60 ft. Flowers? August 1914." G. Forrest. No. 12,915.

"Shweli-Salween divide, Yunnan, in open situations in side valleys. Lat. 25° 40' N. Alt. 8000-9000 ft. Shrub of 12-20 ft. Flowers? July 1919." G. Forrest. No. 18,083.

"S.E. Tibet:—Salween—Kiu-chiang divide, Tsarong province, in thickets. Lat. 28° 40' N. Long. 98° 15' E. Shrub of 20 ft. Oct. 1919." G. Forrest. No. 18,930. Also Nov. 1919. G. Forrest. No. 18,790.

Magnolia nitida, W. W. Sm. Sp. nov.

Species affinis *M. Pealianae*, King a qua foliis minoribus glaberrimis utrinque nitidis inter alia recedit; quoad folia est similis *Micheliae Bodinieri*, Fin. et Gagnep. sed fructu ovoideo haud elongato-spicato praeter signa alia discrepat.

Arbor vel frutex 6-12 m. altus. Rami subgraciles glabri. Folia petiolo 1.5-2 cm. longo glabro supra canaliculato flavo-viridi suffulta; lamina 7-9 cm. longa, 2.5-4 cm. lata, oblonga vel anguste ovato-oblonga, apice breviter acutata, basi late cuneata vel subrotundata, coriacea, glaberrima, supra nitidissima laete viridis, infra pallidior nitens nervis plerumque 7-10 paribus haud conspicuo eminentibus. Flores desunt. Pedun-

culus sat gracilis, maturitate fructuum glaber; regio cicatricum staminalium circ. 7 mm. longa, glabra; gynophorum breve adest, 6-8 mm. longum. Carpella matura 15-20. spicam congestam 5-7 cm. longam 2.5-3 cm. latam formantia, 2-2.5 cm. longa, circ. 1 cm. lata, sutura dorsali dehiscentia, seminibus 1-2 laete aurantiaco-rubris ad 12 mm. longis, ad 7 mm. latis aromaticis.

“Western China:—Mekong-Salween divide, Yunnan, in open mixed forests. Lat. 28° 12' N. Alt. 10,000-11,000 ft. Shrub or tree of 20-40 ft. In fruit, seeds bright orange-red, strongly aromatic. Nov. 1917.” G. Forrest. No. 15,059. Also Oct. 1918. G. Forrest. No. 17,300.

This species like *M. Pealiana*, King shows a short gynophore, but the fruit is that of a *Magnolia*. In its leaves it shows an approach to *Michelia Bodinieri*, Fin. et Gagnep.—a species closely allied to *M. Pealiana* in the opinion of its authors.

Magnolia rostrata, W. W. Sm. Sp. nov.

Species tantum cum *M. officinalis*, Rehder et Wilson et *M. obovata*, Thunb. (*M. hypoleuca*, Sieb. et Zucc.) comparabilis a quibus fructu anguste cylindrico e carpellis parvis longirostratis composito inter alia signa discrepat.

Arbor 12-24 m. alta; ramuli annotini glabri flavidocinerei, vetustiores cicatricibus magnis foliorum delapsorum suborbicularibus notati; gemmae circ. 5 cm. longae, anguste cylindricae, acutatae, glabrae, eis *M. Delavayi*, Franch. simillimae. Folia decidua, ad apicem ramulorum congesta petiolo ad 4 cm. longo cito glabrescente suffulta; lamina ad 32 cm. longa, ad 23 cm. lata, late obovata, apice latissima rotundata, acumine plerumque obsoleto, basim versus angustata et rotundata, in sicco tenuiter papyracea, supra laete viridis maturitate glabra, infra glauca vel subglauca, ad costam nervosque densiuscule fulvo- vel ferrugineo-pilosa, cetera hic illic sparsim pilosula, nervis utrinsecus plus minusve 30 cum. costa elevatis, reticulatione nervulorum utrinque conspicua. Flores praecoces, rosei, cupuliformes, saltem 16 cm. diametro; pedunculi crassi, circ. 2 cm. longi, sub anthesi ut videtur glabri; sepala petalaque 10-11, circ. 7-8 vel nunc 10 cm. longa, 3-5.5 cm. lata, subaequalia, obovata. Stamina numerosa, filamentis ad 5 mm. longis, antheris circ. 1 cm. longis mucrone brevi trianguli praeditis. Carpella pernumerosa stylis ovaria subaequantibus. Fructus cylindricus, 12-14 cm. longus, ad 4 cm. latus, apice paulo angustatus, basi subrotundatus, carpellis infimis haud decurrentibus; carpella inter minora, sub dehiscentiam circ. 1 cm. longa, 5-6 mm. lata, naviculiformia, 1-2-sperma, rostro

valido supra incurvo 6-8 mm. longo coronata; semina multo compressa, circ. 7 mm. longa, 5 mm. lata.

"Western China:—Mekong-Salween divide, Yunnan, in open mixed forests. Lat. $28^{\circ} 12'$ N. Alt. 11,000-12,000 ft. Tree of 60-70 ft. Flowers? Said to be large, white flushed rose? In fruit. Nov. 1917." G. Forrest. No. 15,052. Also Oct. 1918. In fruit. G. Forrest. No. 17,301.

"Sie-la Pass, Mekong-Salween divide, Yunnan, in mixed forest. Lat. 28° N. Alt. 10,000-11,000 ft. Tree of 40-80 ft. Flowers rose-pink, fleshy. May 1918." G. Forrest. No. 16,403.

Since the above description was written I have had the advantage of going over the material with Mr. Forrest. The flowers of No. 16,403 are somewhat imperfect as they were withering when collected. Mr. Forrest is quite clear that certain other specimens of a precocious *Magnolia* are referable to this species. In its flowering state this *Magnolia* has a striking resemblance to *M. Campbellii*, Hook. f. et Thoms. The fruits however are very distinct.

The following are conspecific:—

"Shweli-Salween divide, Yunnan, in mixed and pine forests. Lat. $25^{\circ} 30'$ N. Alt. 10,000 ft. Tree of 60-80 ft. Flowers precocious, bright rose-pink. April 1913." G. Forrest. No. 11,860.

"Mekong-Salween divide, Yunnan, in open situations. Lat. 28° N. Alt. 7000 ft. Shrub of 20 ft. Flowers fragrant, fleshy, creamy-yellow. April 1918." G. Forrest. No. 16,388.

"S.E. Tibet:—Mekong-Salween divide, in pine and mixed forests. Lat. $28^{\circ} 15'$ N. Alt. 10,000-11,000 ft. Tree of 30-60 ft. Flowers rose-pink. Flowers appearing before the foliage. June 1904." G. Forrest, No. 140. Recorded in Notes R.B.G., vii (1912), 15, as *M. conspicua*, Salisb.

"N.W. Yunnan. 1907." Monbeig, No. 11.

"Eastern flank of the N'Maikha-Salween divide, Yunnan, in mixed thickets and forests. Lat. $26^{\circ} 20'$ N. Alt. 8000-9000 ft. Shrub or tree of 30-40 ft. Flowers creamy-white, flushed purplish exterior, fragrant. May 1919." G. Forrest. No. 17,868.

"N'Maikha-Salween divide. Lat. $26^{\circ} 30'$. Tree of 60-80 ft. June 1919." G. Forrest. No. 18,246.

"Upper Burma:—High glens above Hpimaw, 9,000-10,000 ft. Abounds in the higher jungle glades going up to Hpimaw Pass and down on the other side, in China. No two trees seem to bear flowers of the same shade and the pure whites are even more beautiful than the rest. Beginning to pass over by April

11th, though still superb. April 11th, 1919." R. Farrer. No. 816.

This is the plant which Mr. Farrer judged to be closely akin to *M. Campbellii*, Hook. f. et Thoms.

"N.E. Upper Burma. Nov. 1919." G. Forrest. No. 18,751.

***Magnolia tsarongensis*, W. W. Sm. et G. Forrest. Sp. nov.**

Species affinis *M. mollicomatae*, W. W. Sm. supra descriptae a qua ramis hornotinis dense ferrugineo-tomentosis, foliis subtus ferrugineo-tomentosis, stipulis diu persistentibus, fructibus multo minoribus praeter alia signa removitur.

Frutex ex collectore 3-6 m. altus; ramuli mediocriter crassi primum densissime ferrugineo-tomentosi tarde glabrescentes; gemmae 2-3 cm. longae anguste oblongae ferrugineo-tomentosae. Folia decidua petiolo 3-8 cm. longo supra canaliculato dense ferrugineo-tomentoso suffulta; lamina majorum 17-23 cm. longa, 7-12 cm. lata, elliptica, apice ambitu rotundata breviter apiculata, basi rotundata vel nunc cordatula, in sicco membranacea, supra atroviridis ad costam nervosque ferrugineo-tomentella, ceterum primum pilis ferrugineis conspersa, mox glabrescens, infra ad costam nervosque eminentes dense ferrugineo-tomentosa ceterum pilis subferrugineis bene conspersa tempore fructus vix glabrescens; nervi utrinque circ. 12; stipulae diu persistentes 4-7 cm. longae, circ. 8 mm. latae, oblongae, convolutae, primo ad petiolum arcte adpressae, dense ferrugineo-tomentosae. Flores cum foliis coetanei ad 6.5 cm. longi flavidio-albi fragrantes; pedunculus ad 6 cm. longus, 2-3 mm. crassus, dense fulvido-tomentosus; bracteae deciduae pars superstes glabra vel basi pilosa extra verruculosa in sicco nigricans. Sepala petalaque in flore dissecto 8, subaequalia, plus minusve elliptica, utrinque rotundata, medio circ. 3.5 cm. lata. Stamina numerosa, filamentis paulo dilatatis 2-3 mm. longis, antheris 11-12 mm. longis apice retusis connectivo mucronato haud praeditis. Gynaeceum cum parte staminifera 2.5 cm. paulo superans, medio vix 1 cm. latum, glabrum, carpellis numerosis stigmatibus circ. 4 mm. longis acutis paulo recurvis. Fructus circ. 6 cm. longus, 2 cm. latus, symmetricus, oblongus, carpellis 1 cm. paulo excedentibus circ. 30 bene rostratis, seminibus delapsis.

"S.E. Tibet:—Salween-Taron (Kiu-Chiang) divide, Yunnan, in thickets and on the margins of thickets. Lat. 28° 40' N. Alt. ? Shrub of 10-20 ft. Flowers fragrant, creamy-white. July 1919." G. Forrest. Nos. 18,870, 18,512.

"Salween—Kiu-Chiang divide. Lat. 28° 40' N. Long. 98° 15' E. Oct. 1919." G. Forrest. No. 18,959 (duplicate in fruit of No. 18,870).

Michelia Lacei, W. W. Sm. Sp. nov.

Species fructu magno circ. 4 cm. longo bene notata; *M. manipurensi*, Watt affinis.

Arbor mediocris. Rami crassi glabri lenticellis suborbicularibus ornati. Folia petiolo 2-2.5 cm. longo glabro supra canaliculato suffulta; lamina 14-19 cm. longa, 6.5-8 cm. lata, oblongo-elliptica, apice ambitu subrotundata breviter acutata, basi late cuneata vel subrotundata, in sicco tenuiter coriacea, texturā *M. manipurensis* ei similis, maturitate utrinque glabra, nervis lateralibus 12-15 paribus infra marginem arcuatis cum nervulis conspicuo reticulatis. Flores non visi. Pedunculus crassus circ. 1.5 cm. longus; regio cicatricum staminalium circ. 1.5 cm. longa; gynophorum in fructu ad 3 cm. longum glabrum. Carpella matura in specimine nostro 12, pro genere permagna, ad 1 cm. stipitata; circ. 4 cm. longa, 2-2.5 cm. lata, lignosissima, muro 5-8 mm. lato, extra glabra lenticellis orbicularibus bene conspersa; semina in quoque carpello plerumque sex matura, circ. 7 mm. longa, 5 mm. lata, rubra.

"Upper Burma:—Thondaung to Aui Sakan, near Maymyo; alt. 3000 ft. Aug. 1912." J. H. Lace. No. 5928.

Closely allied to *Michelia manipurensis*, Watt, this species has a remarkably large fruit, the individual carpels containing six ripe seeds and evidence that the ovules were at least twelve in number.

Mucuna calophylla, W. W. Sm. Sp. nov.

Species affinis *M. montanae*, Diels a qua foliolis longe acuminate subtus pulchre et dense sericeis facile distingueda est.

Planta debilis scandens ad 1 m. alta. Caules gracillimi primo setis fulvidis conspersi, mox glabri vel subglabri. Folia petiolo 4-7.5 cm. longo setulis consperso glabrescente suffulta; petioluli laterales circ. 5 mm. longi dense fulvido- vel ferrugineo-setosi; petiolulus intermedius ad 2 cm. longus; foliola subaequalia plerumque circ. 7 cm. longa, circ. 3 cm. lata, supra atroviridia setis fulvidis vel subferrugineis appressis primo dense tandem sparsim induta, infra dense molliterque sericeotomentosa, intermedium subsymmetricum late lanceolatum apice caudato-acuminatum, basi rotundatum, lateralia basi valde asymmetrica ceteroquin intermedio subsimilia; nervi 3-4 paria. Flores in speciminibus sejuncti. Calyx circ. 12 mm. longus fere ad medium fissus, cano-tomentosus atque ferrugineo-setulosus; lobi superi lanceolati 5-6 mm. longi, inferus late triangularis. Corolla atro-kermesina; vexillum suborbiculare circ. 2 cm. longum, 1.8 cm. latum; alae circ. 2.8 cm. longae, basi ciliatae; carina circ. 3.5 cm. longa. Fructus deest.

"West China:—Western flank of the Tali Range, on dry grassy slopes. Lat. $28^{\circ} 40'$ N. Alt. 9000 ft. Scandent plant of 2-3 ft. Flowers deep crimson-maroon. July 1917." G. Forrest. No. 15,619.

Ophiorrhiza umbricola, W. W. Sm. Sp. nov.

Species ex affinitate *O. Griffithii*, Hook. f. a qua bracteolis lanceolatis vel oblongo-lanceolatis, corollis majoribus pallide carmineis praeter alia signa recognoscitur.

Planta 20-45 cm. alta basi decumbens caulis glabris vel fere glabris. Folia petiolo circ. 2 cm. longo glabro munita; lamina majorum 9-13 cm. longa, 3-5 cm. lata, lanceolata vel subelliptica, longe acuminata, basi cuneata, tenuiter membranacea, utrinque glabra vel setulosis hic illic pagina superiore conspersa, supra atroviridis, infra multo pallidior, costa nervisque subtus conspicuus; stipulae inconspicuae. Cymae terminales pauciflorae pedunculo ad 3 cm. longo glabro suffultae; ramuli glabri vel minutissime fulvito-puberuli; pedicelli vix 1.5 mm. superantes; bracteolae 5-6 mm. longae lanceolatae vel oblongo-lanceolatae, obtusae, glabrae, costa conspicua pererratae. Calycis tubus circ. 2 mm. longus costatus sparsim et minutissime puberulus dentibus minutis deltaeis. Corolla circ. 2.5 cm. longa pallide carminea extra glabra intus villosa lobis ovatis obtusiusculis circ. 6 mm. longis. Discus conspicuus bilobus in sicco carmineo-suffusus. Fructus deest.

"Upper Burma:—Nwai Valley, on shady banks in forest amongst undergrowth. Alt. 7000-8000 ft. Flowers deep pink. Sept. 1914." F. K. Ward. No. 1944.

"West China:—Shweli-Salween divide, Yunnan, on trees and boulders, in shady mixed forests. Lat. $25^{\circ} 12'$ N. Alt. 8000 ft. Plant of 9-18 inches. Flowers pale carmine, drying a deeper shade. June 1918." G. Forrest. No. 17,656.

Parrya xerophyta, W. W. Sm. Sp. nov.

Species valde affinis *P. linearifoliae*, W. W. Sm. a qua caulis elatioribus miro modo foliis semi-emarginatis onustis, foliis glabris vel subglabris, fructibus oblongis tantum ad margines (et parcissime) pilosus recedere videtur.

Planta quoad folia et flores *P. linearifoliae* simillima sed habitu longe divergit. Pars epigaea ad 15-20 cm. attingens foliis annorum plurium semimarginatis induta. Folia linearia glabra vel subglabra; pars apicalis mox emarginata et cito decidua, pars basalis persistens rigida incrassata straminea, glabra vel hic illic capillis longis albidis conspersa. Inflorescentiae ut in *P. linearifolia*; calyx pedicellusque multo minus pilosi; corolla

pallido-rosea. Ovarium glabrum. Fructus ex speciminibus haud bonis anguste oblongus 4-5 mm. latus ad margines parvissime pilosus.

" West China :—Mountains N.E. of Chungtien, Yunnan, on ledges and in crevices of dry cliffs. Lat. $27^{\circ} 55' N.$ Alt. 14,000 ft. Cushion plant of 6-8 inches height and somewhat greater diameter. Flowers pale rose. July 1918." G. Forrest. No. 16,444.

This is a plant of very remarkable habit. The stems are densely clothed with the persistent and hardened lower halves of the leaves. Notwithstanding the striking habit, the plant approximates closely to *P. linearifolia*, W. W. Sm., but is much more glabrous while the fruits are very narrow oblong.

Plectranthus muliensis, W. W. Sm. Sp. nov.

Species quoad inflorescentiam *P. phyllostachys*, Diels affinis a quo foliis longe petiolatis haud subsessilibus differt; ut in illa specie inflorescentia bracteis conspicuus ornata est.

Planta suffruticosa ad 1 m. alta ramosa caulinibus dense cinereo-tomentosis. Folia petiolo ad 2.5 cm. longo albo-tomentoso praedita; lamina foliorum medianorum ad 9 cm. longa, ad 5.5 cm. lata, ovata, apice plus minusve acuminata, basi breviter et subabrupte in petiolum angustata, margine bene crenato-dentata, papyracea, supra rugosus glabra nisi ad costam nervosque pilis albidis parvis conspicuos, infra pilis simplicibus mollibus incano-tomentella, praesertim ad nervos. Inflorescentiae elongatae angustae terminales et in axillis superioribus ortae, paniculam terminalem formantes; flores in verticillastros 6-8-floros fere continuos compositi; bracteae conspicuissimae, inferiores latissime obovatae atque longiuscule cuspidatae, saepe 2 cm. longae, 1.5 cm. latae, foliaceae et ut folia indutae, supra decrescentes, superiores lanceolatae vel ovato-lanceolatae, acuminatae vulgo circ. 1 cm. longae, 4 mm. latae, etiam ad apicem inflorescentiae verticillastros superantes vel saltem aequantes. Flores 5-6 mm. longi; pedicelli circ. 3 mm. longi pilosuli. Calyx circ. 3.5 mm. longus campanulatus sparsim pilosulus dentibus triangularibus acutis tubum aequantibus albociliatis. Corolla basi gibbosa roseo-purpurea, circ. 5 mm. longa; tubus labii paulo longior; labium inferius breviter quadrilobum. Stamina inclusa.

" West China :—Mu-li Mountains, S.W. Szechwan, on the margins of thickets. Lat. $28^{\circ} 12' N.$ Alt. 10,000 ft. Shrubby plant of 2-3 ft. Flowers creamy-white, flushed and marked rose-purple. Sept. 1918." G. Forrest. No. 17,000.

¹² In the conspicuous bracts this species recalls *P. phyllostachys*, Diels, which has however sessile leaves. In size and form of

flower it is near *P. Coetsa*, Ham., but differs from it in leaves and form of inflorescence, including the bracts.

***Podocarpus Forrestii*, Craib et W. W. Sm. Sp. nov.**

Species affinis *P. macrophylo* (Thunb.), Don a qua habitu humiliore, foliis brevioribus atque latioribus apice obtusis vel etiam rotundatis inter alia recedit.

Frutex 1-3 m. altus; ramuli sat robusti rigidi crebre foliati. Folia cum petiolo 5-8 cm. longa, 9-13 mm. lata, anguste oblonga vel oblongo-lanceolata, apice obtusissima vel subrotundata, nonnunquam subapiculata costa media paululo projecta, basi in petiolum alatum atque vix discretum circ. 2 mm. longum sensim attenuata, margine incrassata, in sicco coriacea, supra subglauco-viridia vel opaco-viridia, infra pallidiora glaucescentia; costa media subtus latiuscula prominula. Flores masculi desunt. Flores feminei singuli; pedunculus circ. 8 mm. longus; receptaculum carnosum, glauco-coeruleum, circ. 3 mm. longum, basi foliolis 2 linearibus circ. 2 mm. longis munitum. Fructus maturus deest.

Podocarpus macrophyllus, Diels vix Don in Notes R.B.G. Edin., vii (1912), 258.

"West China:—Eastern flank of the Tali Range, Yunnan, in shady situations amongst scrub. Lat. 25° 40' N. Alt. 8000-10,000 ft. Shrub of 2-5 ft. Flowers green. Aug. 1906." G. Forrest. No. 4665.

Also Aug. 1910. G. Forrest. No. 6852.

"Western flank of the Tali Shan, in open thickets. Lat. 25° 40' N. Alt. 10,000 ft. Shrub of 4-9 ft. Aug. 1917." G. Forrest. No. 15,527.

This new species is closely akin to the variety *maki*, Sieb. of *P. macrophyllus* (Thunb.), Don, differing chiefly in the form, colour, and consistence of the leaves. Delavay No. 4026, referred by Franchet to *macrophyllus*, is probably this plant.

***Premna scoriarum*, W. W. Sm. Sp. nov.**

Species ex affinitate *P. latifoliae*, Roxb. a qua foliis glaberrimis, calyce 4-dentato inter alia distinguitur.

Frutex 1-2 m. altus. Rami hornotini sat robusti nigridi glabri, annotini cinerei. Folia petiolo circ. 2 cm. longo glabro praedita; lamina foliorum majorum 15-21 cm. longa, 7-10 cm. lata, ovato-lanceolata vel oblongo-lanceolata vel subelliptica, apice caudato-acuminata, basi plus minusve rotundata, margine integra nunc paulo undulata, in sicco papyracea, utrinque glabra, supra atroviridis, infra pallidior, nervis circ. 6 paribus, reticulatione utraque pagina bene conspicua. Inflorescentiae late paniculatae ad 14 cm. latae, ad 8 cm. altae; axes dense et

minute fulvido-pilosi ; bracteae linear-lanceolatae circ. 5 mm. longae pilosae ; pedicelli brevissimi. Calyx circ. 1 mm. longus campanulatus extra minute pilosulus in lobos 4 subaequales ovatos apice rotundatos fere ad medium divisus. Corolla 2 mm. paulo superans ad medium in lobos oblongos obtusos subaequales divisa viridi-alba faucibus pilosa. Stamina 4. Fructus deest.

" West China :—Lava-bed west of Teng-yueh, Yunnan. Lat. 25° N. Alt. 5000 ft. Shrub of 3-6 ft. Flowers greenish-white. May 1912." G. Forrest. No. 7488.

" On lava-bed west of Teng-yueh, Yunnan, in open situations. Lat. 25° N. Alt. 5000 ft. Shrub of 2-4 ft. Flowers yellowish-green. May 1912." G. Forrest. No. 7629.

Reineckia yunnanensis, W. W. Sm. Sp. nov.

Species *R. carneae*, Kunth valde affinis ; spica laxiuscula, flore albo, antheris caeruleis nec flavis, fructu saltem 6-spermo differt.

Planta acaulis foliis 15-20 cm. longis. Habitus foliaque *R. carneae*, Kunth. Spica in speciminiibus nostris 2-3-flora laxiflora. Flores albi fragrantes ; bracteae circ. 5 mm. longae membranaceae late ovatae. Perianthii segmenta sex lanceolata vel lanceolato-oblonga, circ. 12 mm. longa, 4 mm. lata in tubum circ. 5 mm. longum connata, obtusa, recurva. Stamina ad fauces tubi inserta filamentis circ. 4 mm. longis, antheris caeruleis 2.5 mm. longis. Stylus stamina paululo superans ; ovarium superum. Fructus (in sicco compressus) 1 cm. diametro vel paulo ultro seminibus sex ovoideis 4 mm. longis.

" Western China :—Western flank of the Shweli-Salween divide, Yunnan, in open dry situations in pine forests. Lat. 25° 20' N. Alt. 9000-10,000 ft. Plant of 6 inches. Flowers white, fragrant, anthers blue. Aug. 1912." G. Forrest. No. 9010.

" Western flank of the Shweli-Salween divide, on rocks and ledges of cliffs. Lat. 25° 20' N. Alt. 8000-9000 ft. Plant of 6-9 inches. Flowers white. Aug. 1912." G. Forrest. No. 9150.

Saussurea trullifolia, W. W. Sm. Sp. nov.

Species sectionis *Eriocoryne*, Hook. fil. et affinis *S. gossypiphorae*, Don ; foliis perlate obovatis facile recognoscitur.

Caudex crassus foliorum vestigiis dense obsitus ; radix longa fusiformis. Caulis 8-9 cm. altus arachnoideo-lanuginosus dense foliatus. Folia petiolo ad 2.5 cm. longo latiusculo arachnoideo-lanuginoso praedita ; lamina circ. 3 cm. longa, 2.5 cm. lata, late

obovata, apice ambitu rotundata, basi in petiolum subsensim attenuata, margine in dimidio superiore dentata, dentibus sat magnis 8-12, crasse papyracea, utrinque albo-lanuginosa, nervis obscuris. Capitula numerosa in glebam circ. 5 cm. diametro congesta e foliis semiprotrusa; involuci phylla exteriora circ. 2.5 cm. longa, 5 mm. lata, lineari-lanceolata, longe acuminata, capillis longis albis vel fulvidis articulatis dense lanuginosa, interiora circ. 1 cm. longa, 2-3 mm. lata, oblanceolata vel obovata, straminea marginibus hyalino-scariosis, nitentia glabra apice sparsim pilosulo excepto. Corolla circ. 1.2 cm. longa; pappus plumosus 1 cm. longus albidus; setae exteriores paucae. Achenium immaturum glabrum.

"West China:—At A-tun-tsü, N.W. Yunnan, on screes at 15,000-16,000 ft. Aug. 1913." F. Kingdon Ward. No. 1016.

Saussurea velutina, W. W. Sm. Sp. nov.

Species affinis *S. uniflorae*, Wall. a qua sociisque foliis dense et mollissime tomentosis inter alia differt.

Planta erecta 30-35 cm. alta caule simplici robusto laxe albido-piloso basi glabrescente. Folia radicalia delapsa; caulina 6-12, suberecta, 8-14 cm. longa, 1-1.5 cm. lata, lineari-lanceolata vel sublinearia, apice acuminata indurato-apiculata, basi in partem petiolarem vix discretam semiamplexicaulem attenuata, margine remote et minute serrulata, utrinque molliter fulvito-tomentosa, nervis celatis, costa media tantum visibili; folia involucrantia 3-4 cm. longa, capitulum semi-includentia, obovata vel subelliptica, remote serrata vel subintegra, breviter acuminata, purpurea, laxe albido-pilosa. Capitulum solitarium 3-4 cm. diametro pedunculo brevi crasso suffultum; involuci phylla circ. 1.5 cm. longa anguste lanceolata, acuminata, plus minusve albido-villosa, exteriora utraque facie nigrida, interiora straminea marginibus nigris. Corolla 1.5 cm. longa pappo interiore circ. 1 cm. longo sordide albo, setis exterioribus 4-5 mm. longis scabridulis, achenis vix maturis oblongis circ. 3 mm. longis atrobrunneis glabris.

"West China:—On the Bei-ma-shan, N.W. Yunnan, on screes at 16,000 ft. 1913." F. Kingdon Ward. No. 1093.

Schefflera (Heptapleurum) dumicola, W. W. Sm. Sp. nov.

Species affinis *S. salweenensi*, W. W. Sm. et *S. shweilensi*, W. W. Sm. a quibus foliorum oblongorum subtus glaucorum forma atque textura inter alia differt.

Frutex 4-6 m. altus. Folia superiora tantum visa petiolo 15-40 cm. longo glabro suffulta; foliola 5-9, petiolulis 1.5-4.5 cm. longis praedita; lamina 15-24 cm. longa, 4-5 cm. lata,

oblonga, apice plus minusve acuminata, basi cuneata, margine integra, textura tenuis sub fructu papyracea, glabra, supra atroviridis, infra pulchre glauca, nervis utrinque 12-20 haud eminentibus. Panicula fructifera angusta ad 40 cm. longa, basi ad 15 cm. nuda, racemiformis, infra medioque ramulos patentes circ. 4 cm. longos emittens; rhachis stellato-tomentella; flores non visi. Fructus subglobosus circ. 5 mm. diametro purpureo-niger 5-locularis; styli in unum coaliti; stigmata paulo divergentia.

"West China:—Shweli-Salween divide, Yunnan, in scrub and on the margins of mixed forests. Lat. 25° 20' N. Alt. 8000 ft. Shrub of 12-20 ft. In fruit; fruits purple-black. February 1918." G. Forrest. No. 16,158.

The following is probably identical:—

"Western flank of the Tali Range, Yunnan, in open scrub in side valleys. Shrub of 12-20 ft. Foliage only. Lat. 25° 40' N. Alt. 9000 ft. Aug. 1913." G. Forrest. No. 11,665.

Scutellaria tenax, W. W. Sm. Sp. nov.

Species affinis *S. Franchetiana*, Lévl. a qua habitu subdecumbente, racemis terminalibus, foliis multo minoribus floribus coeruleis basi flavidis inter alia signa divergit.

Planta subfruticosa ad 30 cm. alta, caulis pluribus flexuosis saepe decumbentibus tenacibus basi longe nudis dense cinereo-pilosus. Folia petiolo circ. 2 mm. longo pilosulo praedita; lamina 1-2 cm. longa, 1-2 cm. lata, hederiformis, apice obtusa, basi rotundata, margine dentibus magnis utrinque vulgo 2 notata, papyracea, supra pilis appressis conspersa, infra paulo densius. Inflorescentiae terminales vel nonnunquam axillares pauciflorae et laxiflorae; bracteae inferiores foliis subsimiles sed minores, superiores 3-4 mm. longae ovatae vel ovato-lanceolatae integrae obtusae; axis dense glanduloso-pilosus. Flores in paria dispositi, quoad formam atque magnitudinem eis *S. discoloris*, Colebr. subsimiles, ad 4 mm. pedicellati. Calyx 2.5 mm. longus dense glanduloso-pilosus. Corolla 12-13 mm. longa, extra pilis glandulosis bene praedita, opaco-coerulea, basi flava, tubo latiusculo, lobo labii inferioris intermedio tubum fere aequante. Stamina ad apicem loborum fere attingentia. Fructus deest.

"West China:—Mountains of the Chungtien plateau, Yunnan, on open dry pasture. Lat. 27° 40' N. Alt. 10,000 ft. Half-shrubby plant of 1 ft. Flowers dull blue, tube of corolla yellow at base. Aug. 1914." G. Forrest. No. 13,050.

A very distinct plant with its wiry flexuous stems and small hederiform leaves.

Sideroxylon shweliense, W. W. Sm. Sp. nov.

Species affinis *S. burmanico*, Coll. et Hemsl. a quo foliis anguste lanceolatis recedit; a *S. Wightiano*, Hook. et Arn. floribus majoribus differt.

Frutex 1-2 m. altus. Ramuli annotini cinerei glabri. Folia alterna petiolo 6-8 mm. longo primum minute cinereo-adpresso-pilosulo demum glabrescente praedita; lamina 7-8 cm. longa, circ. 2.5 cm. lata, anguste lanceolata, apice longiuscule acutata, acumine ipso obtusiusculo, basi cuneata, in sicco papyracea, supra laete viridis nitens glabra nisi ad costam sparsim pilosulam, infra pallidior glabra vel sparsissime (praesertim ad costam) pilosula. Flores 1-4-fasciculati in axillis foliorum delapsorum, pedicellis 3-4 mm. longis fulvo-tomentosis suffulti. Calycis segmenta 3-4 mm. longa valde imbricata inaequalia late ovata obtusissima extra fulvo-tomentosa intus in parte superiore pilosula. Corolla flava circ. 8 mm. longa extra glabra vel subglabra intus ad tubum pilosula lobis ovato-lanceolatis acutis circ. 5 mm. longis. Stamina 5 filamentis 1.5 mm. longis glabris antheris 2.5 mm. longis; staminodia 5 lanceolata acuta lobos corollae subaequantia paulo fimbriata. Stylus glaber cum ovario tomentoso 5-loculari circ. 11 mm. longus. Fructus circ. 3 cm. longus ovoideus.

"Western China:—In mixed forests in ravines on the western flank of the Shweli-Salween divide, Yunnan. Lat. 25° 40' N. Alt. 9000-10,000 ft. Shrub of 4-6 ft. Flowers creamy-yellow. May 1919." G. Forrest. No. 17,886.

"Sept. 1919. In fruit." G. Forrest. No. 18,555.

Silene sinowatsoni, W. W. Sm. Sp. nov.

Species habitu *S. rosiflora*, F. K. Ward affinis sed floribus remota; ob structuram floris in vicinitatem *S. yunnanensis*, Franch. posita est sed notis multis differt.

Planta in cultura plus minusve decumbens basi ramosus caulis ad 30 cm. longis flexuosis remotiuscule foliosis capillis albis patentibus glandulosis bene indutis. Folia sessilia, ad 4.5 cm. longa, ad 2 cm. lata, ovata vel ovato-lanceolata, apice acuta vel subacuta, basi rotundata, tenuiter papyracea, utraque facie et ad marginem pilis albidis glandulosis bene instructa. Inflorescentiae terminales laxissime cymosae pauciflorae ramis dense albo-glandulosi-pilosae; pedicelli seniores 3-5 cm. longi glandulosi-pilosae; bracteae foliosae circ. 1 cm. longae glandulosae. Calyx 16-17 mm. longus, circ. 6 mm. latus, tubulosus, basi vix angustatus, dentibus linear-lanceolatis acuminatis circ. 5 mm. longis, roseo-purpureus, ad nervos 10 purpureos pilis glandulosis bene praeditus. Petala calycem fere duplo superantia,

rosea, ungue glabro supra paululo dilatato exauriculato circ. 1.6 cm. longo in laminam obovatam circ. 1.3 cm. longam ad medium quadrifidam expanso, lobis interioribus oblongis erosulis exterioribus linearibus minoribus; squamae oblongae vel sublineares circ. 2 mm. longae incisae vel integrae. Staminum filamenta glabra. Ovarium anguste oblongum uniloculare basi parietum vestigiis instructum stylophoro duplo longius, stylis tribus coronatum. Capsula matura deest.

Central China:—Cultivated in the Royal Botanic Garden from seeds sent by Mr Charles Marson Watson.

Strobilanthes shweliensis, W. W. Sm. Sp. nov.

Species affinis *S. multidenti*, Clarke et *S. rhombifolio*, Clarke; a priore foliis basi rotundatis, flore fere dimidio minore inter alia divergit; ab altera caule viscoso-pilosulo, foliis scabridulis majoribus, flore minore praeter alia signa removitur; a *S. scoriarum* autem affini calycibus viscoso-pubescentibus differt.

Planta circ. 1 m. alta erecta caulis subquadratis primo dense viscoso-pilosulis tandem glabrescentibus. Folia superiora ad regionem inflorescentiae sessilia, inferiora petiolo 1-2 cm. longo subglabro suffulta; lamina majorum 12-15 cm. longa, circ. 7 cm. lata, ovata vel ovato-lanceolata, apice acuminata, basi plus minusve rotundata, margine crebre et regulariter serrulata, serraturis utrinque circ. 50, in sicco submembranacea, tactu utrinque scabridula, lineolata, inter dentes sparsim ciliolata; nervi ad 10 paria. Inflorescentiae ampliae anguste paniculatae ad 30 cm. longae; rhachis cum ramis ramulisque dense glanduloso-pilosa; bracteae sub anthesi deciduae. Calyx circ. 1 cm. longus pilis longis glandulosis dense indutus, in lobos 5 lineares fere ad imum divisus. Corolla 2.5-3 cm. longa fere recta extra glabra purpurea, intus glabra (nisi ad unum locum apud fauces albo-villosum); tubus infra cylindricus supra subito ampliatus, parte ventricosa paulo longiore, lobis rotundatis circ. 5 mm. diametro. Stamina 4 filamentis glabris, polline typico. Ovarium minute pilosulum stylo gracillimo in parte inferiore sparsim pilosulo. Fructus deest.

"West China:—Shweli-Salween divide, Yunnan, in open situations by streams. Alt. 10,000 ft. Lat. 25° 20' N. Plant of 3-4 ft. Flowers ruddy purple. Sept. 1917." G. Forrest. No. 16,107.

Thunbergia salweenensis, W. W. Sm. Sp. nov.

Species valde affinis *T. maculatae*, Lace a qua floribus kermesinis, calyce longiuscule denticulato glabro inter alia divergit.

Planta scandens ad 1-5 m. attingens. Caules herbacei, glabri vel subglabri nisi ad nodos ubi pilorum albidorum subsetaceorum

linea circumdati. Folia petiolo 2-2.5 cm. longo praedita, plerumque circ. 7-10 cm. longa, 4-5 cm. lata, ovata, apice plus minusve acuminata, basi subrotundata et subabrupte in petiolum supra paulo alatum angustata, obscure et distanter denticulata vel subintegra, in sicco membranacea, supra pilis subsetaceis conspersa, infra pallidiora glabra, nervis utrinque 3-4 in sicco conspicuis. Flores axillares, solitarii, pedicellis 5-7 cm. longis glabris praediti; bracteolae eis *T. maculatae* simillimae. Calyx irregulariter et prominenter denticulatus, sed vix ita conspicuo ut in sectione *Euthunbergia*, glaber. Corolla circ. 4.5 cm. longa ex collectore kermesina, immaculata, extra glabra intus minute pilosula, lobis subaequalibus rotundatis. Stamina inclusa filamentis apice glabris infra pilosis et glandulosis; antherae acuminatae circ. 6 mm. longae, acumine 2 mm. longo longe piloso atque basi appendicula 2 mm. longa oblonga pilosa praeditae. Discus mediocris carnosus. Ovarium glabrum stylo 2.7 cm. longo glabro apice obscure bilobulato munitum. Fructus deest.

"West China:—Salween Valley, Yunnan, on scrub. Lat. 25° 10' N. Alt. 3000 ft. Scandent plant of 4-5 ft. Flowers deep crimson. Aug. 1914." G. Forrest. No. 13,158.

"Shweli-Salween divide, Yunnan, on scrub in thickets. Lat. 25° 30' N. Alt. 7000-8000 ft. Scandent plant of 10-15 ft. Flowers red. July-Aug. 1918." G. Forrest. No. 17,645.

This Yunnan species is very like *T. maculata*, Lace from the Ruby Mines District of Burma. The leaves, bracteoles, and the structure of the flower, especially the stamens, are very similar. The Yunnan plant differs chiefly in the crimson or red flowers (instead of white or yellowish white) without conspicuous spotting, and in the pronounced lobing of the calyx which is glabrous. The lobing of the calyx is not so regular nor so prominent as in *T. fragrans*, Roxb., but it is much more pronounced than in the scarcely toothed ring which is found in the section *Meyenia*.

***Tovaria finitima*, W. W. Sm. Sp. nov.**

Species ex affinitate *T. Delavayi*, Franch. et *T. tatsienensis*, Franch.; floribus roseis, stylo brevissimo ovarium haud aequante inter alia bene notata.

Planta 45-60 cm. alta, rhizomate crasso, fibris numerosis tomentellis. Caulis erectus sat crassus, stramineus in sicco, glaber. Folia 3-4 vel ad 7, plerumque in dimidio superiore, petiolo 10-20 mm. longo praedita; lamina plerumque 10-18 cm. longa, 4-6 cm. lata, ovato-lanceolata vel oblongo-lanceolata, apice longissime et acutissime acuminata, acumine ipso minute scabrido-marginato, basi rotundata, utrinque glabra, in sicco membranacea. Inflorescentiae eleganter paniculatae floribus

longiuscule pedicellatis sed vix numerosis; bracteae 1-2 mm. longae lineares vel lineari-lanceolatae; axes glabri patenter ramosi; pedicelli plus minusve 5 mm. longi floribus longiores. Perianthium circ. 8 mm. diametro saturate roseum, fere ad basim partitum, segmentis fere 4 mm. longis late ellipticis utrinque rotundatis vel obtusis. Stamina vix 1 mm. superantia filamentis complanatis deltoideis. Ovarium subglobosum circ. 2.5 mm. diametro, stylo vix 1 mm. longo apice obscure trilobulo, loculis tribus vulgo 2-spermis.

"Western China:—In the Shweli Valley, Yunnan, in shady situations. Lat. 25° 30' N. Alt. 7000 ft. Plant of 1½-2 ft. Flowers deep dull rose. July 1913." G. Forrest. No. 12,040.

"Mingkong Valley, Yunnan, in thickets. Lat. 25° 20' N. Alt. 6500 ft. Plant of 2½ ft. In fruit. July 1912." G. Forrest. No. 8642.

"Upper Burma:—At Htawgaw, valley of Naung-Chaung, Lashi country, in forest, deep shade. 8000-9000 ft. Flowers greenish with red border. May 1914." F. Kingdon Ward. No. 1611.

The following in fruit and with the leaves sparingly pubescent on both sides is I believe the same:—

"Western flank of the Shweli-Salween divide, Yunnan, in shady situations in thickets. Lat. 25° 20' N. Alt. 9000 ft. Plant of 2 ft. In fruit. Aug. 1912." G. Forrest. No. 9019.

With similar leaves is also:—

"Shweli-Salween divide, in open thickets and cane brakes. Lat. 25° 30' N. Alt. 10,000 ft. Plant of 18-24 inches. Flowers dull deep rose. Sept. 1917." G. Forrest. No. 15,988.

Tovaria Wardii, W. W. Sm. Sp. nov.

Species valde affinis *T. atropurpureae*, Franch. a qua foliis subtus puberulis, racemis basi compositis, floribus albis vel roseo-tinctis, perianthii lobis obtusis, stylo ovarium aequante ex descriptione differt.

Planta 30-45 cm. alta rhizomate crasso. Caulis erectus, in sicco stramineus, infra glabrescens, in dimidio superiore subsparsim pubescens. Folia 6-8, petiolo brevissimo amplexicauli praedita; lamina 12-16 cm. longa, 5-7 cm. lata, ovato-lanceolata, apice mediocriter acuminata, basi rotundata, supra glabra, infra sparsim pubescens, in sicco membranacea. Inflorescentiae racemosae basi bene ramosae multiflorae; bracteae 1-1.5 mm. longae lineares vel lineari-lanceolatae; axes ascendentibus vix patentes densiuscule pubescentes; pedicelli circ. 3 mm. longi pubescentes. Perianthium circ. 7 mm. longum album vel nunc roseo-tinctum, ad medium partitum, segmentis ovatis obtusis. Stamina vix 1 mm. longa, ad fauces tubi inserta, filamentis

subcylindricis antheras vix aequantibus. Ovarium ovoideum circ. 1.5 mm. longum glabrum stylum apice trilobulum subaequans. Fructus deest.

"Western China:—At A-tun-tsü, N.W. Yunnan, in rain-forest undergrowth. Alt. 10,000–12,000 ft. June 1913." F. Kingdon Ward. No. 556.

"Upper Burma:—Ridge of Naung Chaung, Nwai divide. Alt. 11,000–12,000 ft. Flowers pure white, or petals sometimes bordered with red. In damp shady moss-covered places on the ridge beneath dwarf bamboo brake. July 1914." F. Kingdon Ward. Nos. 1811, 1812.

Vaccinium oreogenes, W. W. Sm. Sp. nov.

Species inter congeneres indo-burmanicos floribus solitariis ex axillis foliorum superiorum natis bene notata; folia eis *V. Doniani*, Wight sociorumque ejus subsimilia; nullo modo affinis *V. modesto*, W. W. Sm. speciei chinensi floribus solitariis praeditae.

Frutex ad 1 m. altus ramosus ramulis junioribus glabris valde angulatis bene foliatis, senioribus cinerascentibus. Folia petiolo 2–3 mm. longo latiusculo sparsim puberulo praedita; lamina plerumque 4–6 cm. longa, 1.5–2 cm. lata, lanceolata, apice sensim acuminata, basi cuneata, margine crebro et minute serrulata, supra opaco-viridis glabra, costa media pilosula excepta, infra paulo pallidior glabra papillosa, nervis 6–7 paribus subtus in sicco paulo prominulis. Flores in axillis superioribus solitarii pedicellis 6–7 mm. longis subarcuatis glabris suffulti; bracteolae cito deciduae 4–5 mm. longae linear-lanceolatae membranaceae glabrae nunc ad medium pedicellum, nunc sub calycem positae. Calycis lobi deltoidei 2 mm. longi, apice apiculati, in sicco rubidi. Corolla globosa 8–9 mm. longa, lobis ovatis obtusis 1.5–2 mm. longis, ex collectore alba. Stamina 10 filamentis 3 mm. longis pilosis, antheris 1.5 mm. longis tubulis 2.5 mm. longis praeditis, aristis duabus subulatis dorso affixis. Ovarium circ. 3 mm. longum glabrum stylo 7 mm. longo. Fructus deest.

"Upper Burma:—Naung Chaung Valley on open grassy granite hills at 9000–10,000 ft. Small bushy shrub of 2–3 ft. Flowers white. July 1914." F. Kingdon Ward. No. 1732.

Viburnum shweliense, W. W. Sm. Sp. nov.

Species sectionis Thrysosmatis, Rehder et affinis *V. yunnanensi*, Rehder, a quo foliis multo majoribus, petiolis duplo majoribus glabrescentibus inter alia ex descriptione differt; facies ramorum atque foliorum *V. Simonsii*, Hook. f. et Thoms. in memoriam revocat.

Frutex 2-3 m. altus; ramuli crassi glabri lenticellis magnis circularibus conspicuo conspersi cinerei. Folia petiolo 2-2.5 cm. longo subglabro vel pilis fasciculatis consperso supra sulcato suffulta; lamina plerumque 8-12.5 cm. longa, 4-6 cm. lata, ovalis vel oblongo-ovalis, apice obtusa vel paulo acutata, basi plus minusve late cuneata, margine serraturis induratis numerosis notata, membranacea, decidua, supra atroviridis glabra, infra pallidior, ad costam paulo eminentem atque ad nervos pilis fasciculatis conspersa; nervi 6-7-jugi paulo flexuosi in dentes excurrentes. Inflorescentiae terminales et ramulos breves laterales bifoliatos terminantes paniculatae, circ. 5 cm. longae, circ. 5 cm. latae, pilis fasciculatis albidis dense indutae; pedunculus 3-4 cm. longus pilosus; bracteae 2-5 mm. longae, linearilanceolatae vel sublineares, membranaceae, sparsim pilosulae. Calycis lobi ovati vix 1 mm. longi obtusi glabri. Corolla alba rotata; tubus circ. 3 mm. longus glaber; lobi 1.5-2 mm. longi late ovati reflexi. Stamina summam corollam aequantia ultra lobos reflexos projicientia. Ovarium turbinatum glabrum circ. 3 mm. longum.

"West China:—Shweli-Salween divide, Yunnan, in open scrub. Lat. 25° 20' N. Alt. 10,000 ft. Shrub of 6-9 ft. Flowers creamy-white. July 1917." G. Forrest. No. 15,818.

Viola pogonantha, W. W. Sm. Sp. nov.

Species ex affinitate *V. belophyllae*, de Boissieu (*V. serpens*, Wall., var. *macrantha*, Franch.); foliis longiuscule petiolatis longe acuminatis, petalis intus villosulis, ovario dense villosulo inter alia signa notata.

Planta 10-15 cm. alta. Rhizoma elongatum articulatum, ad collum stipulis emarcidis indutum, ut videtur estoloni-ferum. Caulis brevis foliis caulinis et basilaribus subsimilibus. Folia petiolo gracili 8-12 cm. longo infra glabro supra prope laminam setulis deflexis albidis bene praedito suffulta; lamina 6-8 cm. longa, 3-4 cm. lata, plus minusve ovata, apice longiuscule acuminata, basi alte cordata lobis subrotundatis, margine regulariter serrato-crenata crenis obtusis, supra setulis albidis conspersa, infra ad costam nervosque satis setosula; stipulae pallido-virides circ. 1.5 cm. longae linearilanceolatae longissime acuminatae subintegrae vel fimbriis glandulosocapitatis paucis instructae. Pedunculi circ. 6-8 cm. longi petiolis breviores bracteolis linearibus circ. 7 mm. longis. Flores mediocres albi purpureo-striati. Sepala circ. 7 mm. longa, lineariloblonga, apice obtusiuscula vel subacuta, albido-pilosula appendicibus circ. 2 mm. longis quadratis. Petala circ. 1 cm. longa, oblonga, intus ad dimidium inferius pilis albidis bene barbata; calcar circ. 3 mm. longum, pro longitudine latum,

obtusissimum. Appendices connectivorum magni ovati antheris fere aequilongi. Stigma terminale truncatum; ovarium minute villosulum. Capsula submatura fere globosa villosula seminibus paucis.

"West China:—Taping-pu Valley, Yunnan, in shady thickets by streams. Lat. $25^{\circ} 30'$ N. Alt. 7000 ft. Plant of 4–6 inches. Flowers white, veined purple. May 1913." G. Forrest. No. 9925.

Wikstroemia leptophylla, W. W. Sm. Sp. nov.

Inter species chinenses foliis linearibus glabris, inflorescentiis paniculatis, floribus pentameris bene notata.

Frutex 1–1.5 m. altus, ramosus, bene foliatus, ramulis novellis plus minusve quadratis gracilibus pallido-viridibus glabris, senioribus cinerascentibus. Folia opposita vix petiolata; lamina 3–6 cm. longa, 3–6 mm. lata, linearis vel lineari-lanceolata, apice plus minusve acuta, basi in insertionem sensim angustata, margine revoluta, in sicco membranacea, glabra, pallido-viridis, subitus pallidior, costa media infra eminente. Inflorescentiae ramulos terminantes, vulgo e racemis ternis compositae, circ. 6 cm. longae, 10–20-florae, glabrae, pedunculis 2–3 cm. longis, pedicellis vix 1 mm. longis. Perianthii flavidо-viridis tubus 12–13 mm. longus, circ. 2 mm. latus, anguste cylindricus, glaber; lobi circ. 1.5 mm. longi, ovato-oblongi, obtusi. Stamina 8, biseriata, antheris 1 mm. longis filamenta superantibus. Ovarium circ. 4.5 mm. longum, oblongum, glabrum apice sparsim pilosulo excepto; stigma magnum capitatum stylo brevi suffultum. Fructus deest.

"West China:—Mountains in the N.E. of the Yangtze bend, Yunnan, in open dry situations amongst rocks. Lat. $27^{\circ} 45'$ N. Alt. 9000 ft. Shrub of 3–4 ft. Flowers yellowish-green. Sept. 1913." G. Forrest. No. 11,230.

"Mountains in the N.E. of the Yangtze bend, Yunnan, in open situations on the margins of thickets. Lat. $27^{\circ} 45'$ N. Alt. 10,000 ft. Shrub of 3–5 ft. Flowers green. July 1913." G. Forrest. No. 10,563.

Allied perhaps to *W. dolichantha*, Diels.

Wikstroemia mekongensis, W. W. Sm. Sp. nov.

Inter species chinenses tetrameras foliis papyraceis oblanceolatis vel obovatis obtusis glabris, inflorescentiis late paniculatis, floribus purpureo-kermesinis inter alia signa bene notata.

Frutex 1–2 m. altus, ramosus, bene foliatus, ramulis novellis subteretibus sat crassis pallido-viridibus glabris. Folia opposita petiolo crasso 1–2 mm. longo suffulta; lamina vulgo 4–5.5 cm. longa, 1.5–2.5 cm. lata, oblanceolata vel obovata, apice rotundata

breviter et obtusiuscule apiculata, basi late cuneata, margine plana, in sicco papyracea, glabra, supra pallido-viridis, infra pallidior, costa media infra conspicua albida, nervis lateralibus subobscuris. Inflorescentiae terminales late paniculatae, ad 12 cm. longae, ad 9 cm. latae, pedunculis crassis glabris, racemis ipsis circ. 20-floris sparsim albido-pilosulis, pedicellis circ. 1 mm. longis albido-pilosulis. Perianthii purpureo-kermesini tubus circ. 8 mm. longus, 1 mm. latus, anguste cylindricus, sparsim pilosulus; lobi 1 mm. paulo superantes oblongi obtusi; disci squama unica oblonga apice erosa. Stamina biseriata antheris circ. 1 mm. longis filamenta superantibus. Ovarium circ. 2.5 mm. longum apice pubescens, stigmate capitato, stylo brevissimo. Fructus deest.

"West China:—Mekong Valley, Yunnan, in open situations amongst rocks by streams. Lat. $27^{\circ} 40'$ N. Alt. 8000 ft. Shrub of 3-6 ft. Flowers deep purple-crimson. July 1914." G. Forrest. No. 13,079.

In appearance this species suggests *W. scytophylla*, Diels, but differs very widely in the inflorescence. In cultivation the flower buds are purplish at the apex but the flowers are greenish-yellow.